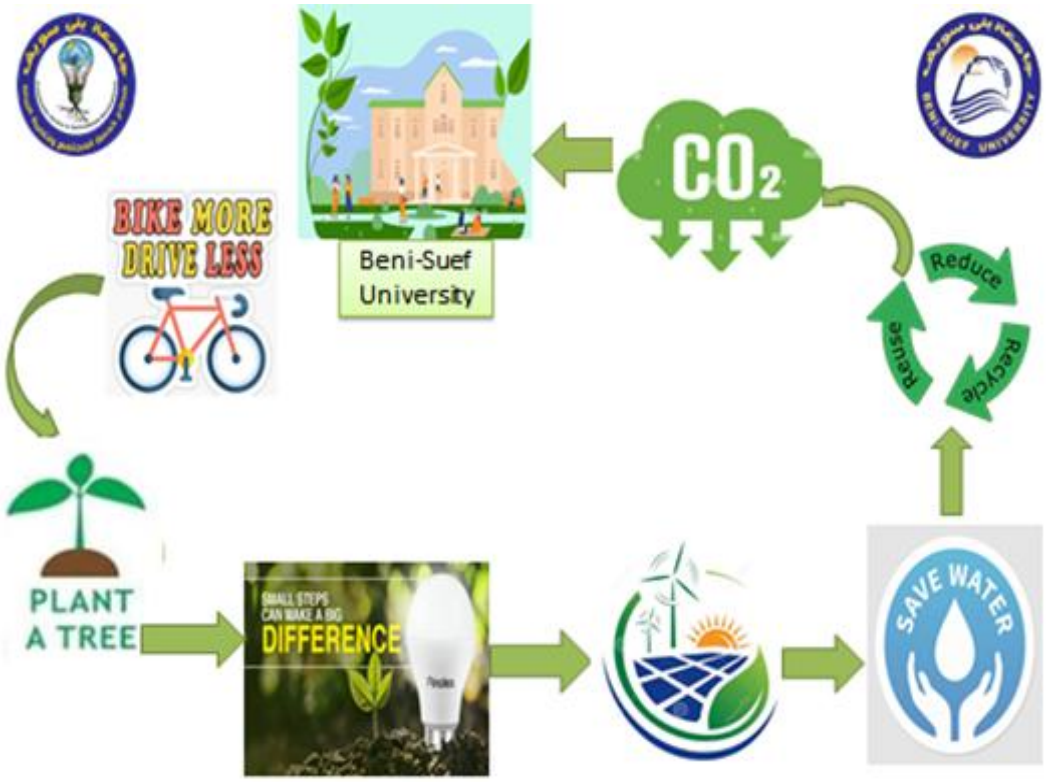
Beni-Suef University (BSU): The Way Forward Towards Decarbonization

The University's plan towards decarbonization aims to reduce the energy consumption of the organization’s operations in pursuit of reducing its overall carbon footprint.



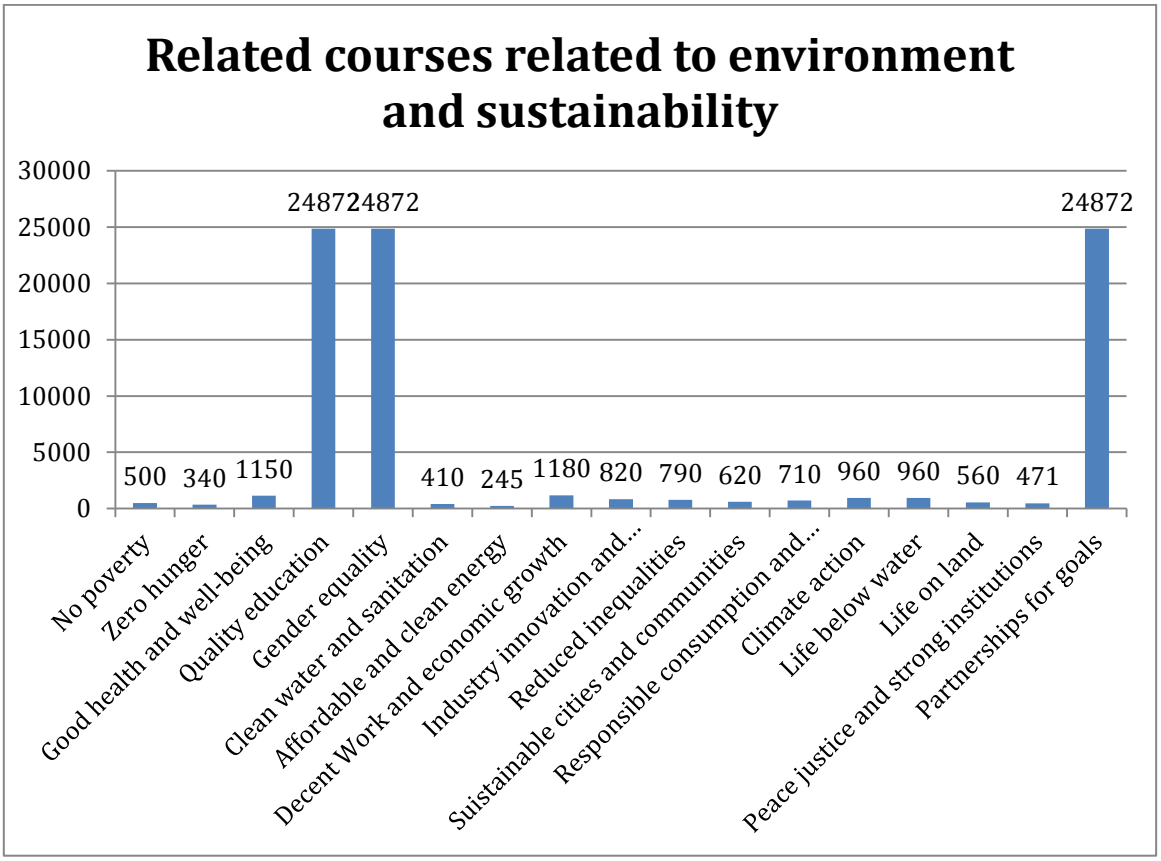
Overview of Green Strategies and Technologies implemented at Beni-Suef University

BSU has key implementation points to promote carbon reduction that focus on clean transportation, renewable energy, pollution prevention and waste management, energy efficiency, water management and wastewater treatment.

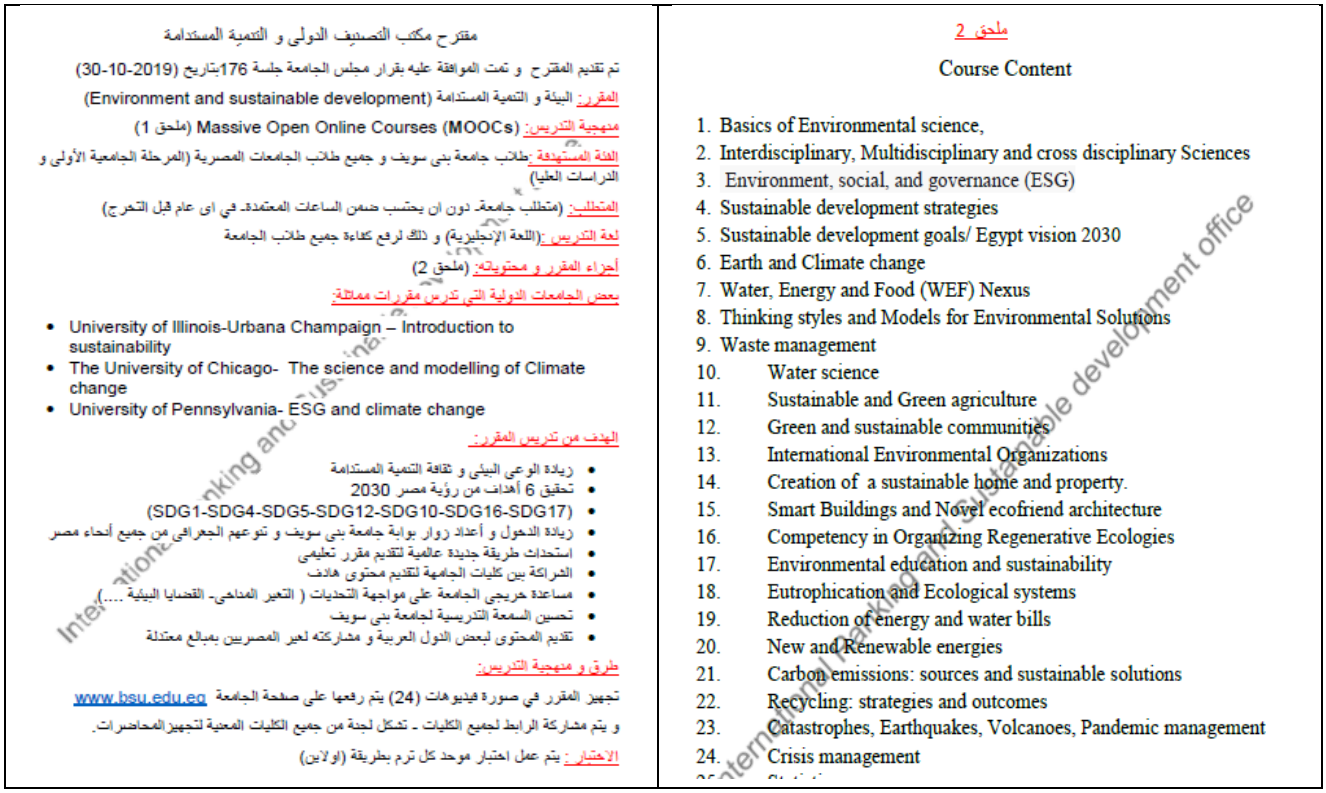
1. **The key points are implemented in each sustainability strategy through the following, that are not limited:**

1.1. First: Education

1.1.1. The academic programs are distributed among different goals of sustainability involving those related to environment as described by the below figure.



1.1.2. The proposal of the Office of International Classification and Sustainable Development about teaching the environment and sustainable development electronic course was approved. As shown by the two below images:



مقترح مكتب التصنيف الدولى و التنمية المستدامة

تم تقديم المقترح و تمت الموافقة عليه بقرار مجلس الجامعة جلسة 176بتاريخ (30-10-2019)

المقرر: البيئة و التنمية المستدامة (Environment and sustainable development)

منهجية التدريس: Massive Open Online Courses (MOOCs) (ملحق 1)

الفئة المستهدفة :طلاب جامعة بنى سويف و جميع طلاب الجامعات المصرية (المرحلة الجامعية الأولى و الدراسات العليا)

المتطلب: (متطلب جامعة- دون ان يحتسب ضمن الساعات المعتمدة- في اى عام قبل التخرج)

لغة التدريس :(اللغة الإنجليزية) و ذلك لرفع كفاءة جميع طلاب الجامعة

أجزاء المقرر و محتوياته: (ملحق 2)

بعض الجامعات الدولية التي تدرس مقررات مماثلة:

- University of Illinois-Urbana Champaign – Introduction to sustainability
- The University of Chicago- The science and modelling of Climate change
- University of Pennsylvania- ESG and climate change

الهدف من تدريس المقرر:

- زيادة الوعى البيئى و ثقافة التنمية المستدامة
- تحقيق 6 أهداف من رؤية مصر 2030 (SDG1-SDG4-SDG5-SDG12-SDG10-SDG16-SDG17)
- زيادة الدخول و أعداد زوار بوابة جامعة بنى سويف و تنوعهم الجغرافى من جميع أنحاء مصر
- استحداث طريقة جديدة عالمية لتقديم مقرر تعليمى
- الشراكة بين كليات الجامعة لتقديم محتوى هادف
- مساعدة حريجى الجامعة على مواجهة التحديات (التغير المناخى- القضايا البيئية ....)
- تحسين السمعة التدريسية لجامعة بنى سويف
- تقديم المحتوى لبعض الدول العربية و مشاركته لغير المصريين بمبالغ معتدلة

طرق و منهجية التدريس:

تجهيز المقرر في صورة فيديوهات (24) يتم رفعها على صفحة الجامعة www.bsu.edu.eg

و يتم مشاركة الرابط لجميع الكليات - تشكل لجنة من جميع الكليات المعنية لتجهيز المحاضرات.

الاختبار : يتم عمل اختبار موحد كل ترم بطريقة (اونلاين)

ملحق 2

Course Content

1. Basics of Environmental science,
2. Interdisciplinary, Multidisciplinary and cross disciplinary Sciences
3. Environment, social, and governance (ESG)
4. Sustainable development strategies
5. Sustainable development goals/ Egypt vision 2030
6. Earth and Climate change
7. Water, Energy and Food (WEF) Nexus
8. Thinking styles and Models for Environmental Solutions
9. Waste management
10. Water science
11. Sustainable and Green agriculture
12. Green and sustainable communities
13. International Environmental Organizations
14. Creation of a sustainable home and property.
15. Smart Buildings and Novel ecofriend architecture
16. Competency in Organizing Regenerative Ecologies
17. Environmental education and sustainability
18. Eutrophication and Ecological systems
19. Reduction of energy and water bills
20. New and Renewable energies
21. Carbon emissions: sources and sustainable solutions
22. Recycling: strategies and outcomes
23. Catastrophes, Earthquakes, Volcanoes, Pandemic management
24. Crisis management

1.1.3. Development of skills of the university's students and providing them with the latest information and scientific studies in the agricultural field. For example;

- A. Using simulation models to improve water productivity and yield in dry areas
- Organizing training courses for the use of modern and non-traditional techniques in the agricultural sector, including the applications of area sciences, geographic information systems and remote sensing.

1.1.4. Students of the plant production program at Faculty of Agriculture did different field visits, such as ;

a) A field visit to develop some strategic crops to withstand the shortage of water and nitrogen in the newly reclaimed lands in Middle Egypt and Toshka.

b) A field visit to train students of the plant production program to Dina's farm on the Cairo-Alexandria Desert Road.

1.1.5. There are different training courses about soilless farming and Aquaponics. One of the significant benefits of aquaponic growing is the minimal water wasted compared to conventional farming. Aquaponics use approximately 90 % less water than traditional farming. In aquaponics, the

water is recycled and used timely, as there is no soil to absorb water, and aquaponics continuously uses the same recycled water.

1.2. Second: Scientific Research

1.2.1. The Getting funding for a large number of research projects in the energy field.

1.2.2. Performing many projects that aim to reduce carbon dioxide emissions and global warming.

1.2.3. Invest in environmental projects to compensate for the share of BSU emissions.

1.2.4. Supporting innovative solutions to address environmental problems.

1.2.5. Many theses and diplomas are interested in the field of environmental;pollution, energy field and renewable energy at BSU. For example, Environmental and Energy Department at Faculty of Postgraduate studies for Advanced Sciences is concerned with giving many master's and doctorate degrees as well as diplomas in more than 10 programs specialized in fields of energy, environment, climate change, cement chemistry and technology and quality control. As displayed by the attached figure:

Number of registered and awarded degrees (M.Sc., Ph.D. and diplomas)

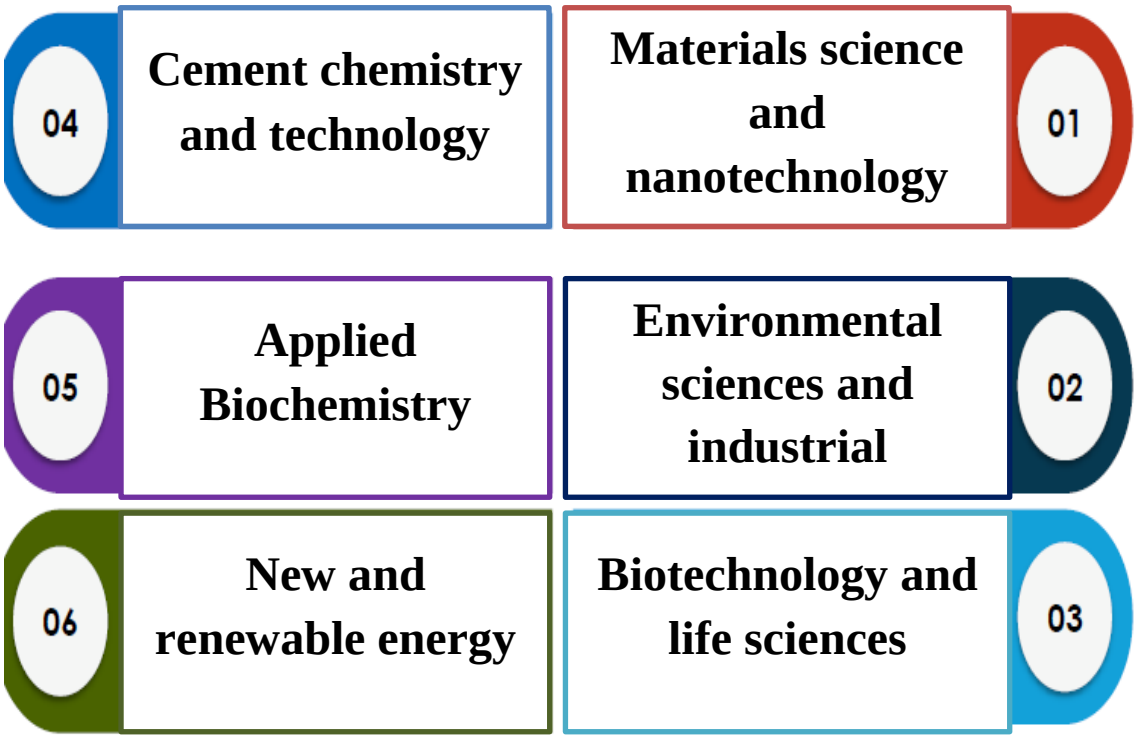
year	M.Sc.R	M.Sc. A	Ph.D.R	Ph.D.A	Diplome R	DiplomeA
2014	2	0	6	0	65	51
2015	38	0	17	0	88	67
2016	39	1	7	1	130	80
2017	27	7	9	2	181	120
2018	44	9	9	2	360	262
2019	28	16	10	5	466	364
2020	36	10	8	2	853	637
2021	49	19	10	4	119	286
2022	32	22	8	5	221	210
total	**295**	**84**	**84**	**21**	**2483**	**2077**

1.2.6. Faculty of Postgraduate studies for Advanced Sciences and Faculty of Earth Science have a strong infrastructure of integrated devices and laboratories that continuously conducts advanced researches and studies to solve environmental problems and to achieve the sustainable development goal based on reducing carbon dioxide emissions and combate environmental pollution.

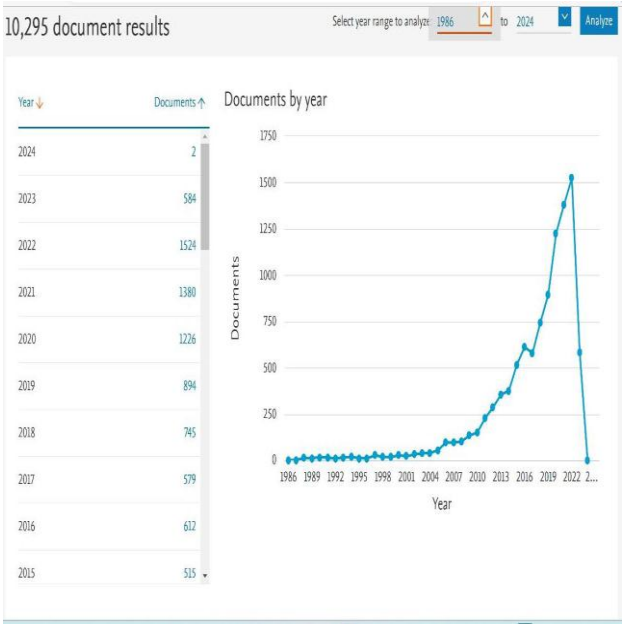
1.2.7. Registration of master's and doctoral theses based on the research plan that serves the goals of sustainable development. The below screenshot of the website of Faculty of Postgraduate studies for Advanced Sciences was an example for the online published research plan:

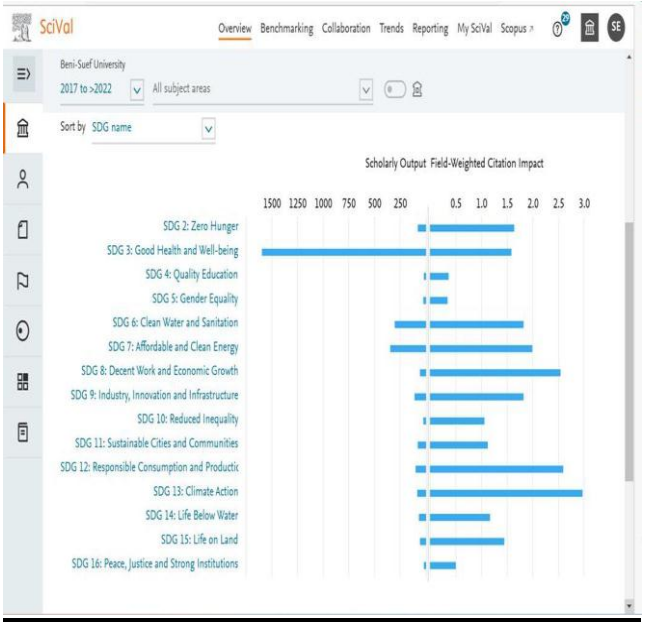
1.2.8. The participation of students in competitive master's scholarships from the Center of Excellence for Water in cooperation with the American University in Egypt.

1.2.9. Faculty of Postgraduate studies for Advanced Sciences has programs that serve the goals of sustainable development such as:



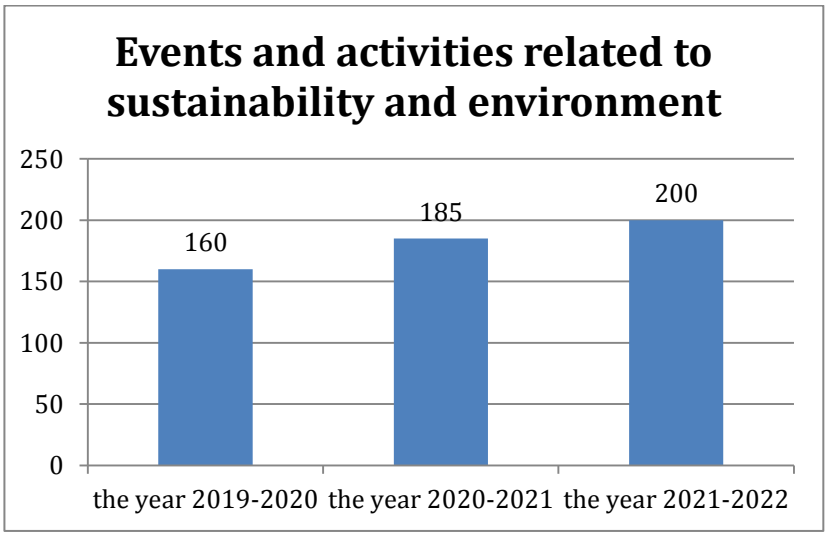
1.2.10. There are many books, literature and scientific research related to the environment as described by the below images:





1.3.Third: Community Service

1.3.1. BSU supports the sustainable development of the local environment by helping community residents to understand sustainable development goals and effective strategies, and to provide them with professional knowledge on good water management. These are achieved through holding a series of seminars, workshops, conferences and initiatives to raise awareness of the sustainable development goals. As described by the attached figure:



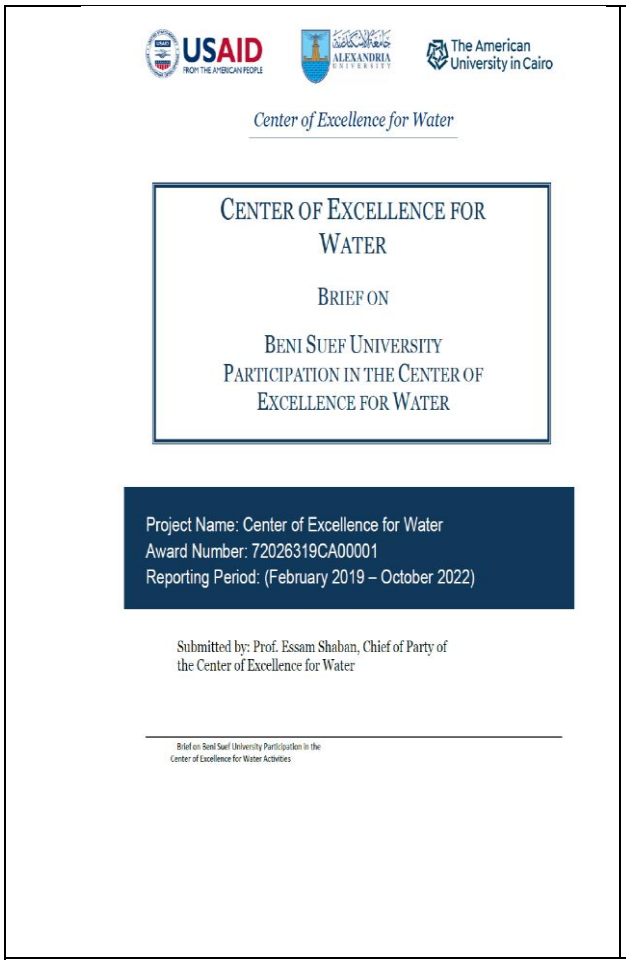
1.3.2. Many awareness convoys are launched for many villages in Beni-Suef Governorate.

1.3.3. Organizing scientific conferences that aim to evaluating the effects of climate change and providing solutions.

1.3.4. Center for the Development of Means of Preserving the Environment at BSU aims to identify environmental problems in the province and work to solve them in a scientific manner to reduce them. It also establishes close cooperation with advisory offices, governmental and industrial bodies, and community and scientific institutions, to solve environmental problems and provide specialized technical advice. In addition, it actively contributes to the development and implementation of policies, whether at the governorate or national level.

1.3.5. There are different training courses about soilless farming and Aquaponics. One of the significant benefits of aquaponic growing is the minimal water wasted compared to conventional farming. Aquaponics use approximately 90 % less water than traditional farming. In aquaponics, the water is recycled and used timely, as there is no soil to absorb water, and aquaponics continuously uses the same recycled water.

1.3.6. The university continues to cooperate with governmental water resources related departments. BSU also collaborate with governmental organization and NGOs on climate adaptation. The below images are some examples:



USAID FROM THE AMERICAN PEOPLE · ALEXANDRIA UNIVERSITY · The American University in Cairo

Center of Excellence for Water

CENTER OF EXCELLENCE FOR WATER

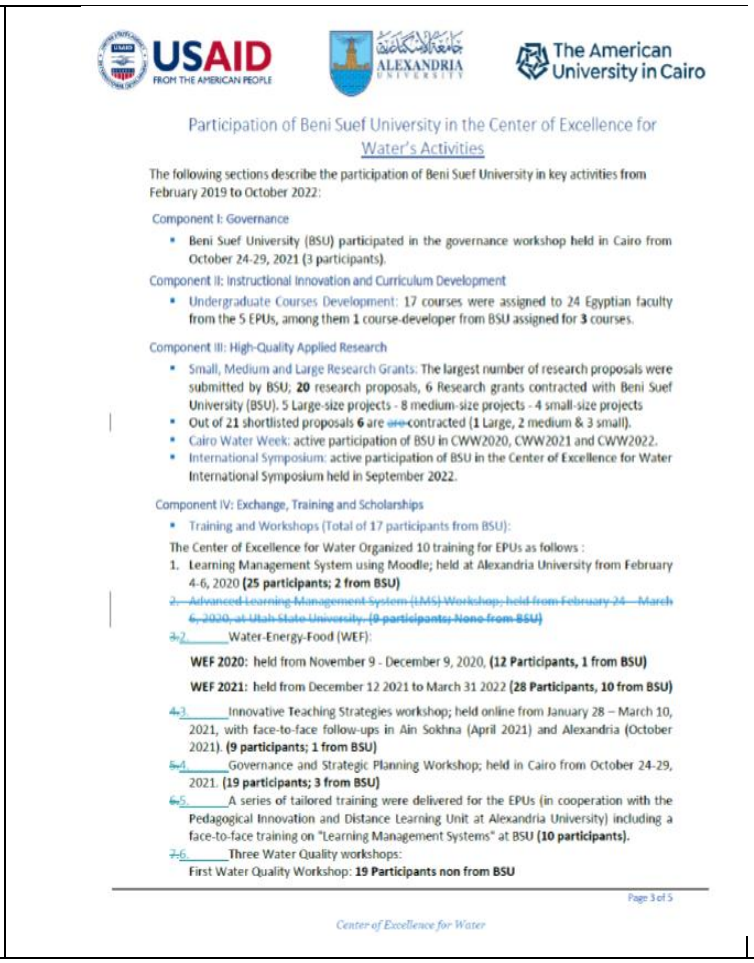
BRIEF ON

BENI SUEF UNIVERSITY PARTICIPATION IN THE CENTER OF EXCELLENCE FOR WATER

Project Name: Center of Excellence for Water
Award Number: 72026319CA00001
Reporting Period: (February 2019 – October 2022)

Submitted by: Prof. Essam Shaban, Chief of Party of the Center of Excellence for Water

Brief on Beni Suef University Participation in the Center of Excellence for Water Activities



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Participation of Beni Suef University in the Center of Excellence for Water's Activities

The following sections describe the participation of Beni Suef University in key activities from February 2019 to October 2022:

Component I: Governance

- Beni Suef University (BSU) participated in the governance workshop held in Cairo from October 24-29, 2021 (3 participants).

Component II: Instructional Innovation and Curriculum Development

- Undergraduate Courses Development: 17 courses were assigned to 24 Egyptian faculty from the 5 EPUs, among them 1 course-developer from BSU assigned for **3** courses.

Component III: High-Quality Applied Research

- Small, Medium and Large Research Grants: The largest number of research proposals were submitted by BSU; **20** research proposals, 6 Research grants contracted with Beni Suef University (BSU). 5 Large-size projects - 8 medium-size projects - 4 small-size projects
- Out of 21 shortlisted proposals **6** are ~~are~~ contracted (1 Large, 2 medium & 3 small).
- Cairo Water Week: active participation of BSU in CWW2020, CWW2021 and CWW2022.
- International Symposium: active participation of BSU in the Center of Excellence for Water International Symposium held in September 2022.

Component IV: Exchange, Training and Scholarships

- Training and Workshops (Total of 17 participants from BSU):

The Center of Excellence for Water Organized 10 training for EPUs as follows :

1. Learning Management System using Moodle; held at Alexandria University from February 4-6, 2020 **(25 participants; 2 from BSU)**
2. ~~Advanced Learning Management System (LMS) Workshop; held from February 24 – March 6, 2020, at Utah State University. (9 participants; None from BSU)~~
3. Water-Energy-Food (WEF):

   WEF 2020: held from November 9 - December 9, 2020, **(12 Participants, 1 from BSU)**

   WEF 2021: held from December 12 2021 to March 31 2022 **(28 Participants, 10 from BSU)**
4. Innovative Teaching Strategies workshop; held online from January 28 – March 10, 2021, with face-to-face follow-ups in Ain Sokhna (April 2021) and Alexandria (October 2021). **(9 participants; 1 from BSU)**
5. Governance and Strategic Planning Workshop; held in Cairo from October 24-29, 2021. **(19 participants; 3 from BSU)**
6. A series of tailored training were delivered for the EPUs (in cooperation with the Pedagogical Innovation and Distance Learning Unit at Alexandria University) including a face-to-face training on "Learning Management Systems" at BSU **(10 participants).**
7. Three Water Quality workshops:
   First Water Quality Workshop: **19 Participants non from BSU**

Page 3 of 5

Center of Excellence for Water

Example for brief on BSU partnership in the Center of Excellence for water, a USAID funded project

قرارات مجلس جامعة بني سويف رقم (١٧٨) بتاريخ ٢٠١٩/١٢/٣١م

أمانة المجالس واللجان

رقم الموضوع (٢١١)

- الجهة الصادر لها:
الموضـــــوع :

المذكرة المعروضة من مدير مركز تطوير وسائل المحافظة على البيئة بشأن الموافقة على إنشاء مركز التميز البحثي المصري الصيني لإدارة وتكنولوجيا المياه من خلال مركز تطوير وسائل المحافظة على البيئة وذلك على النحو المعروض .

القرار

وافق المجلس

أمانة المجالس واللجان
مجلس الجامعة

يعتمد ...
رئيس الجامعة - رئيس المجلس
أ.د/ منصور حسن

أمين عام الجامعة - أمين المجلس

A cooperation protocol between the university and Chinese Research Center of Excellence for Water Management and Technology

1.3.7. Many medical, agricultural, veterinary and awareness convoys are launched for many villages in Beni-Suef Governorate.

1.3.8. Organizing scientific conferences that aim to evaluating the effects of climate change and providing solutions.

1.3.9. Center for the Development of Means of Preserving the Environment at BSU aims to identify environmental problems in the province and work to solve them in a scientific manner to reduce them. It also establishes close cooperation with advisory offices, governmental and industrial bodies, and community and scientific institutions, to solve environmental problems and provide specialized technical advice. In addition, it actively contributes to the development and implementation of policies, whether at the governorate or national level.

1.3.10. The Central Laboratory and Environment and Water Lab at Faculty of Postgraduate Studies for Advanced Sciences

It contains many devices and tools necessary to conduct analyzes and measurements of water pollutants, and analyzes for different companies and

factories inside and outside Beni-Suef Governorate. It helps in making decisions and recommendations necessary to solve many environmental problems related to water pollution and its negative impact on the health of the citizen, which consequently affects the national economy.

1.3.11. Providing practical educational systems to solve environmental problems, including:

"People Against Extremism"

"Youth for Development"

Organization of Google Developer Student Clubs

"Scout units"

Organization of "Students for Egypt"

Volunteer work

1.3.12. The Water Studies and Research Center at Faculty of Earth Science.

It is one of the specialized centers at the level of Egyptian universities in conducting all studies related to the sustainable management of water resources (conventional and Unconventional, renewable and non-renewable) in terms of exploration, evaluation and purification and treatment and reuse as well as desalination, control and quality assurance for all Processes. Where it is concerned with the following strategic goals;

a) Conducting studies on rising groundwater levels and their negative effects on the surrounding environment and infrastructure, as well as the quality of agricultural soil.
b) The evaluation of several sewage treatment plants in Beni-Suef, Governorate.
c) Making the necessary environmental measurements for many factories in Beni-Suef Governorate.
d) Making an integrated environmental record for the University (making environmental measurements for the various faculties of BSU from classrooms, student laboratories, research laboratories, service units) and providing recommendations and proposals with periodic follow-up every 6 months.
e) Make a plan to educate citizens on how to rationalize the consumption of water resources and make good use of them, provided that the university members implement this plan during the summer vacation in some villages of Beni-Suef Governorate.

1.4. Fourth: The sustainable Campus

Through the following campus operations:

1.4.1. The university is directed to restore the old buildings with better insulation.
1.4.2. Finding alternative environmentally friendly modes is one of the most important concerns for all parts of the university.
1.4.3. The periodic supervision of the University's administrative security for all offices, research laboratories and halls after the end of the official working hours, to ensure that all light sources are closed.
1.4.4. The use of light – colored paints inside college buildings.
1.4.5. Distribution of ventilation holes in halls, offices, roads and building entrances.

1.4.6. Using of energy-saving and self-battery research devices.

1.4.7. Providing energy-saving air conditioners and refrigerants.

1.4.8. The solar energy project is circulated within different parts of Beni-Suef University.

1.4.9. Indirect energy sources related to water usage, water waste, and treatment. Hence, water efficiency audit for all facilities to achieve reduced water usage and consumption and to contribute to save the energy.

1.4.10. Leaky taps or toilets are repaired immediately.

1.4.11. There is a periodic inspection of all water taps in faculties, institutes and various centers in the university.

1.4.12. Periodic maintenance of water lines by the General Administration of Engineering Affairs of the university.

1.4.13. Different water-saving equipment within Beni-Suef University.

1.4.14. Faculty of Earth Science, Faculty of Science and Faculty of Postgraduate Studies for Advanced Sciences have centers and laboratories that are concerned with the conservation, development and good management of water resources through the purification of drinking water, sewage treatment.

1.4.15. Directing to replace petrol and diesel tanks with cars and buses running on natural gas or biofuel.

1.4.16. Expanding in the green space in all campuses of BSU.

1.4.17. Ensure regular maintenance of all vehicles and equipment on a regular basis, with proper controls and maintenance.

1.4.18. Presence of chimneys and hoods in the places of food preparation and services at the university.

1.4.19. Presence of programs for university waste recycling and reducing the use of paper and plastic in the university.

1.4.20. Increasing the campaigns, initiatives, workshops and seminars aiming to raise the awareness of energy and water saving and to encourage youth to find innovative solutions for energy problems.

1.4.21. There are several initiatives that have been conducted in the University to reduce number of private cars, such as:

a) Supported or free bus shuttle services for staff, students and employee to decrease the use of personal cars and motorcycles and to solve the problems of traffic congestion and parking space.

b) Car Free Day Project by reducing the number of days allowed for parking of private cars to only three times a week aims to encourage the university's population to reduce the use of private cars. This will reduce air and noise pollution, traffic congestion and accidents, including energy consumption reduction.

c) Encouraging cycling through launching the Bicycle Festival at the campus of Beni-Suef University at the beginning of each academic year.

d) An initiative launched by a number of the university staff for leaving their university cars from accessing to the university campus for three months.

e) Presence of parking areas outside the campus of Beni-Suef University. All Beni-Suef University sites are cyclist and pedestrian friendly. Many have vehicle-free paths for these users.

1.4.22. BSU pays a great attention to wastes recycling, hence all faculties, institutes and departments place recycling bins for paper and plastic within offices, halls and laboratories to implement recycling. Wastes recycling reduce water and energy consumption and reduce the production of gas methane and carbon dioxide in the atmosphere. BSU also has contracts with companies supplying wastes for different places for reuse purpose and

provide financial resources to the university. For example, supplying paper wastes for the printing press for reuse purpose.

1.4.23. The Water Studies and Research Center at the Faculty of Earth Sciences is conducting an environmental assessment for laboratories and workshops at the university. It has many appliances that can help monitoring the environment, maintaining air quality and reducing climate changes.

1.4.24. BSU focuses on the storage and utilization of rainwater and the use of abundant local underground aquifers to meet the water needs for irrigation and planting.

1.4.25. Faculties of Science, Earth Science, and postgraduate Studies for Advanced Sciences are interested in assessment of quality of drinking water in Beni-Suef using the latest scientific research devices.

1.4.26. The use of agricultural drainage water to irrigate the greenhouses located on the 320 acres campus.

1.4.27. Cutting or trimming of extra grass and using more gravel instead. By using more gravel, the gardens become more decorative and help reducing the watering of grass.

1.4.28.

2. No doubt that the energy sector is the largest emitter of carbon emissions and is the largest contributor to climate change compared to other sectors in the world in the upcoming periods.

BSU is planning to the following in the next years;

2.1. BSU arranges a budget for energy-saving improvement projects annually and it pays a great attention to rationalize energy consumption

2.2. BSU is planning to install new roof-mounted photovoltaic panels on the various buildings in 2023 and 2024.

2.3. Increasing of the green spaces in all university campuses.

2.4. Rendering recommendations for using buses that work with electricity inside the university.

2.5. Generalizing the use of lamps and lighting poles with light sensors inside all different buildings of the university. This allows the automatic lighting and closing in response to sunlight and hence, energy saving and reducing climate change.

2.6. Providing different buildings with more modern and energy-saving means such as smart outlets that allow the passage of sunlight with keeping the atmosphere cool leading to a reduction in the use of air conditioners.

2.7. The university seeks to fulfill the pledge to provide 100% renewable energy through collaboration projects, research projects, and related activities.

2.8. Generalization the use of sensors with water taps in all buildings the university.

2.9. Adopt and implement an integrated waste management system.

2.10. The implementing of the center for environmental monitoring and limiting the risks of climate change at Beni-Suef University will be completed by next year. It will be a unique center at the level of Egyptian universities that will strength the university's role in facing climate changes and in order to achieve the principle of sustainability and Egypt's vision of 2030.

It will aim to the following;

a) Monitoring all environmental problems in Beni-Suef Governorate
b) Determining the type and sources of these problems, and their relationship to potential climate changes
c) Providing appropriate scientific solutions according to the type of each problem
d) Making a map of climatic challenges and all risks that threaten water and agricultural resources and air pollution

e) Creating a database of problems which results in negative effects on the environment and directing them to be enrolled in master's and doctoral degrees.

f) Establishing a number of environmental monitoring stations in cooperation to monitor carbon emissions.

g) Providing scientific advices in the field of wastewater treatment, and assessing the environmental impact of all development activities and projects at the governorate level.

3. Conclusion

Building on the implemented energy and water savings and carbon reduction policies over the next 7-8 years, by 2030, BSU Campuses are expected to reach carbon neutrality on 2030.

4. Some other evidence images

Example of solar lamp poles (Beni-Suef University –Faculty of Postgraduate Studies for Advanced Science, Beni-Suef)

Example of generating electricity from small solar panels (Beni-Suef University - Faculty of Engineering, Beni-Suef)

Example of 5 Kw Roof Panel (Beni-Suef University - Faculty of Postgraduate Studies for Advanced Sciences, Beni-Suef)

Example of miniature wind turbine (Beni-Suef University - Faculty of Engineering, Beni-Suef)

Example of different articles and posters that are always published on the official page of Beni-Suef University to help reduce the environmental pollution.

Example of awareness events: The lighting of Beni-Suef University in green celebrating with the World Earth Day

Example of climate change events: Inaugurating the Egyptian Public Universities Activities and Events Forum to Confront Climate Changes.

Example of comprehensive convoys: An awareness convoy at the Faculty of Earth Sciences to the village of Ashmant within the initiative of a decent life

Example of conferences organization: The Fourth International Conference "The Risks of Environmental Pollution in Developing Countries"

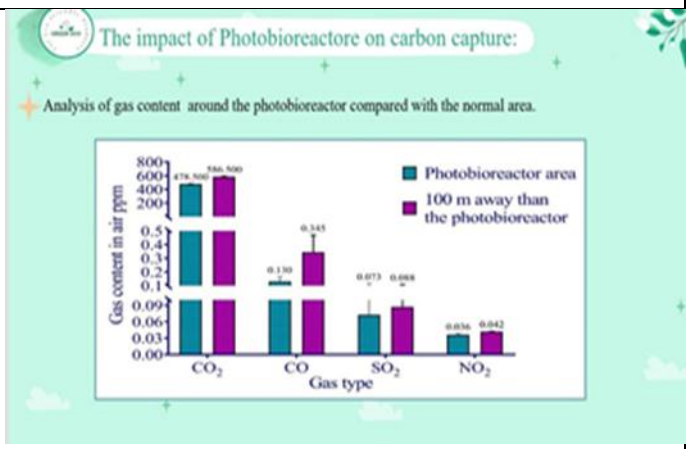


Photo bioreactor analysis

Example of projects aiming to reduce carbon dioxide emissions: ((Carbon sequestration by genetically modified microalgae for Biofuel production))

جامعة بنى سويف
الإدارة العامة للسلامة والصحة المهنية وحماية البيئة

السيد الأستاذ الدكتور / منصور حسن -- رئيس الجامعة

تحية طيبة وبعد...

نرجو من معاليكم الموافقة على رفع جميع المخلفات الورقية (اوراق الامتحانات بالصناديق السابقه والمخلفات الورقيه المختلفه) وذلك بجميع الكليات والمعاهد والقطاعات المختلفة بالجامعة للتعاقد المركزي مع الشركات الموردة للاوراق للمطبعه واعادة استخدامها وتوفير الموارد المالية للجامعة .

ولمعاليكم جزيل الشكر...

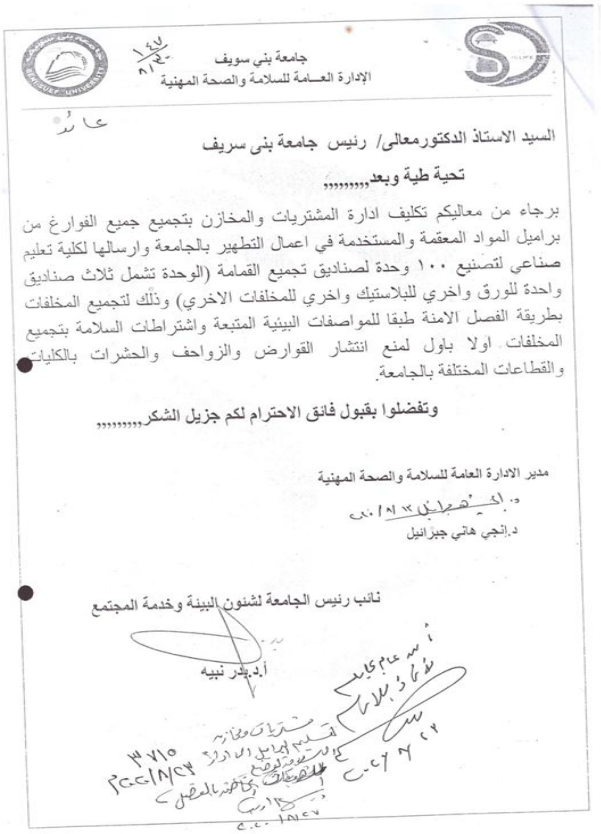
مدير الادارة العامة للسلامة والصحة المهنية وحماية البيئة

د/ انجي هاني جبرائيل

نائب رئيس الجامعة لشئون خدمة المجتمع وتنمية البيئة

أ.د/ سامح الحراثي

Contracting with companies supplying waste paper for the printing press for the purpose of reuse



جامعة بنى سويف
الإدارة العامة للسلامة والصحة المهنية

السيد الاستاذ الدكتورمعالى/ رئيس جامعة بنى سويف

تحية طية وبعد,,,,,,,,,,

برجاء من معاليكم تكليف ادارة المشتريات والمخازن بتجميع جميع الفوارغ من براميل المواد المعقمة والمستخدمة في اعمال التطهير بالجامعة وارسالها لكلية تعليم صناعي لتصنيع ١٠٠ وحدة لصناديق تجميع القمامة (الوحدة تشمل ثلاث صناديق واحدة للورق واخري للبلاستيك واخري للمخلفات الاخري) وذلك لتجميع المخلفات بطريقة الفصل الامنة طبقا للمواصفات البيئية المتبعة واشتراطات السلامة بتجميع المخلفات اولا بأول لمنع انتشار القوارض والزواحف والحشرات بالكليات والقطاعات المختلفة بالجامعة.

وتفضلوا بقبول فائق الاحترام لكم جزيل الشكر,,,,,,,,,,

مدير الادارة العامة للسلامة والصحة المهنية

د.انجي هاني جبرائيل

نائب رئيس الجامعة لشئون البيئة وخدمة المجتمع

أ.د.بشر نبيه

Example of a document for separation of wastes in a safe manner in accordance with the applicable safety and followed environmental specifications.

جامعة بنى سويف – كلية علوم الارض
مركز الدراسات وبحوث المياه

كلية الهندسه

فيما يلى التقرير الفنى لبعض القياسات البيئية التى أجريت لبعض النقاط داخل الكلية يوم الثلاثاء الموافق 2021/5/4 بمعرفة مركز الدراسات وبحوث المياه بكلية علوم الارض جامعة بنى سويف.

اولا: قياسات الغازات

• نقطة القياس	CO 2 mg/m3	CO mg/m3	SO2 mg/m3	NO2 mg/m3	VOC mg/m3	H2S mg/m3
معمل الطرق	322	3.22	0.00	0.02	2.10	0.00
معمل الخرسانة	523	1.96	0.00	0.55	3.11	0.00
(2)		10(1)	150	150	-	-

(1) المواصفة القياسية المصرية لقيمة الحد الأقصى لجودة الهواء المحيط على النحو المنصوص عليه في القانون 4/1994 وتعديله (قانون 9/2009).

(2) متوسط 8 ساعات

ثانيا: قياسات المواد الغير غازية

امكن القياس	PM10 mg/m3
معمل الطرق	0.737
معمل الخرسانة	0.616
(1)	150

(1) المواصفة القياسية المصرية لقيمة حد الأقصى لجودة الهواء المحيط على النحو المنصوص عليه في القانون 4/1994 وتعديله (قانون 9/2009).

Page 3 of 8

جامعة بنى سويف – كلية علوم الارض
مركز الدراسات وبحوث المياه

ثالثا: بعض القياسات البيئية Environmental measurements

امكن القياس	Noisy (dp)	Illumination intensity (lux)	Heat stress (°C)
معمل الطرق	111	165	32
معمل الخرسانة	103	72	31
(1)	90		

الملاحظات و التوصيات:

شدة الإضاءة تحتاج لتعديل في ورشة النجارة لتحقيق الرؤية المطلوبة.
سجلت شدة الصوت قيم جميعها أعلي من الحد الأقصى المسموح به للوردية الواحدة (8 ساعات) وهو 90 dp
سجلت قيم درجة الحرارة متقاربة.
المعملان في مكان ضيق مقارنة بنسبة الصوت وبقصهما التهوية ولا يوجد شفاطات بالمكان.
الأخصائي في المعمل يحتاج ضروريا لأدوات حماية شخصية وخاصة سماعات الأذن والكمامات.
قياسات الإشعاعات الهوائية تمت في ظروف عادية وتوصي بالقياس في ظروف أخرى يصفها العمال بتواجد غازات كثيفة.
المكان بحاجة ماسه للوحات ارشادية علي كل الأجهزة واللوحات الكهربائية وتحديد مسار الخروج أو الهروب.
توفير أمان لصوت جهاز كسارة تفتيت الركام ووجوب الكشف الدوري للسمع للعاملين.

وتفضلوا بقبول فائق الإحترام

د./ محمد عبدالوهاب عطاالله
مدير مركز الدراسات وبحوث المياه

أ.د./ علي فرني سنبه
رئيس مجلس إدارة مركز الدراسات وبحوث المياه

Page 4 of 8

Technical report of some environmental measurements for some points within the Faculty of Engineering on 4/5/2021 by The Water Studies and Research Center