



جامعة الإمام عبد الرحمن بن فيصل
IMAM ABDULRAHMAN BIN FAISAL UNIVERSITY



SDG 15

Life on Land

Sustainable
Development Report

2023-2024

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1. Forest Vegetation in IAU Campus



Trees at IAU Campus



Saplings planted across the Campus



Conservation of Plants and Trees at IAU campus



Plant Vegetations at IAU Building



Green Campus at IAU



Trees across the Campus



Saplings and flowering plants planted across the Campus



Saplings are planted in Dry lands



Trees maintained and frequently at IAU Campus



Lush environment at IAU



Treated water used in Water Fountains



Plant beds and trees consuming treated water



Consumption of treated water for various plants and trees



Trees of all sizes adorning IAU campus



Trees everywhere crowning IAU





Trees even reaching to two stories





Trees and Plants at IAU



Big Trees and plants: Family Medicine



Big Trees: On the pathway



Planted trees and plants: University Hospital



Natural Trees & plants at the entrance of IAU buildings



Big Trees Near Parking Slots



Big trees on the pathway outside IAU buildings



Big Trees at Orientation Studies - Medical Track

SDG Life on Land



Big Trees at entrance of IAU main gate



Natural Trees & Plants at Student Restaurant 1



Building 110 - VIP



Natural Tree plantation in the Campus



Saplings ready to be planted



Trees all across the campus



Plantation at Orientation Studies - Medical Track



Plantation at College of Architecture & Planning



Grass at Sports Stadium



Planted Vegetation at Staff Housing



Student Housing trees and plants



College of Dentistry



Patches of Grass bed Infront and back of each building



Various trees adjacent to buildings, pathways, parking, on medians etc.



Green grass: Spread on various places in Campus



Planted vegetation



Trees: On the pathway



Trees and plants: Near parking slots



Trees and plants at the entrance of IAU buildings



Trees and plants: Building 200



Trees and plants: University Hospital



Trees and plants: Family Medicine

Description:

As it is evident from the above building pictures, that IAU administration is committed towards green campus, as evidence many natural plants and trees were maintained in addition various big trees and plants were planted. The description is as follows: -

Total main campus area (m₂) = **6,165,741 m²**

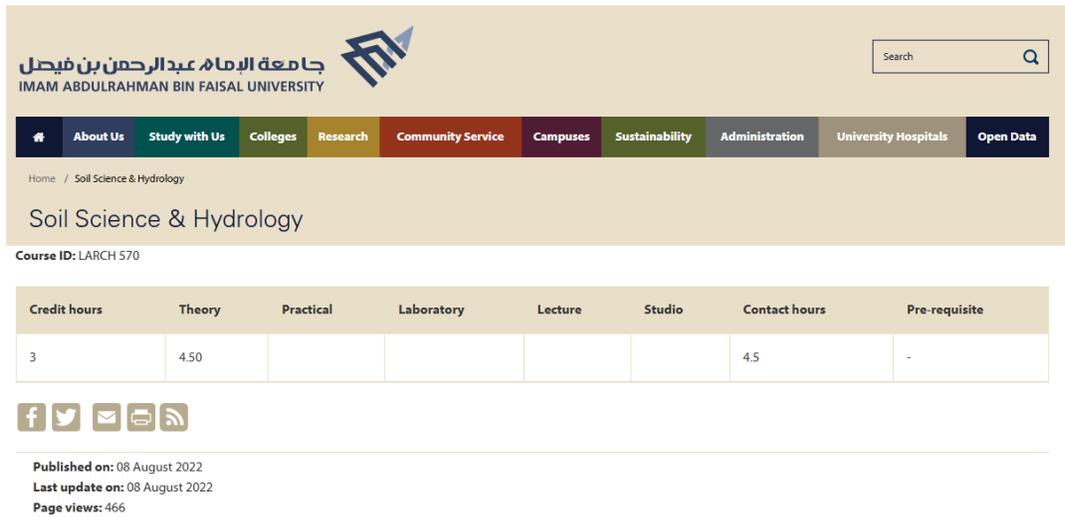
Total area on campus covered in forest vegetation (m²) = **1,389,422m²**

The percentage of the area on campus covered in forest vegetation excluding to the total campus area

= 23%

2. Courses offered by IAU for Student Community on Life on Land

Soil Science & Hydrology



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Soil Science & Hydrology

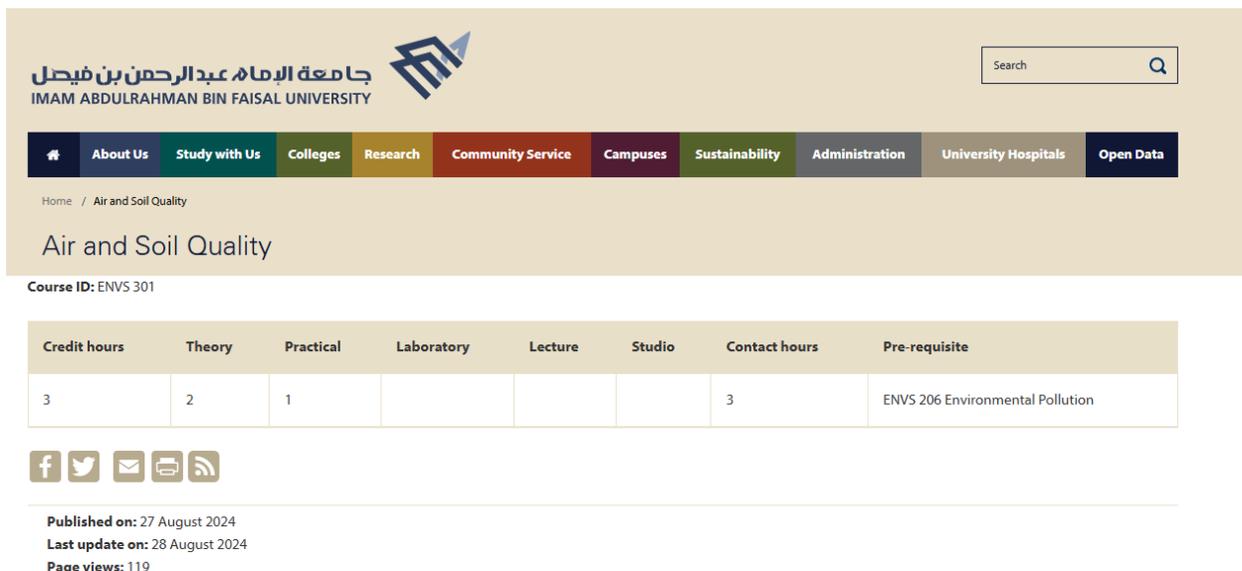
Course ID: LARCH 570

Credit hours	Theory	Practical	Laboratory	Lecture	Studio	Contact hours	Pre-requisite
3	4.50					4.5	-

Published on: 08 August 2022
Last update on: 08 August 2022
Page views: 466

<https://www.iau.edu.sa/en/courses/soil-science-hydrology-0>

Air and Soil Quality



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Air and Soil Quality

Course ID: ENVS 301

Credit hours	Theory	Practical	Laboratory	Lecture	Studio	Contact hours	Pre-requisite
3	2	1				3	ENVS 206 Environmental Pollution

Published on: 27 August 2024
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Page views: 119

<https://www.iau.edu.sa/en/courses/air-and-soil-quality>

Soil Geography and Biology



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Soil Geography and Biology

Course Main Objective

The main objective of course is to study the biosphere of the earth through learning about the soil's origin, components, taxonomy naturally and chemically and geographical distribution locally and globally; know about origin and evolution of living beings and the factors affecting their spreading and reproduction as well as their taxonomy and geographic distribution globally and applying to KAS as a model.

Course Learning Outcomes

- 1. Knowledge and Comprehension
 - 1.1 Identify the soil and bio-geography-related basics and concepts.
- 2. Skills
 - 2.1 Interpret reasons beyond diversity of soil and living beings locally and globally and analyze their geographic distribution and apply best methods to preserve them and achieve the sustainable development.
 - 2.2 Employ computer technology in preparing and implementing individual assignments.
- 3. Values
 - 3.1 Appreciate the importance of cooperation among working team in discussing the soil and living beings-related problems locally and globally.

<https://www.iau.edu.sa/en/courses/soil-geography-and-biology>

Geography of Soil



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Geography of Soil

Course ID: GEOG 307

Credit hours	Theory	Practical	Laboratory	Lecture	Studio	Contact hours	Pre-requisite
3	3					3	-



Published on: 29 August 2022
 Last update on: 29 August 2022
 Page views: 295

<https://www.iau.edu.sa/en/courses/geography-of-soil-0>

Geography of Agriculture



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Geography of Agriculture

Course Main Objective

At end of the course, student will be able to Identify the importance of agriculture activity and its position among the other economic activities and further analyze the different natural and human components which affect the agricultural and animal production; explain evolution of farming craft and the agricultural types and the differences of geographic distribution regarding types of agriculture as well as assessment of models of crop yields in local and world environments.

Course Learning Outcomes

- 1. Knowledge and Comprehension
 - 1.1 Define agriculture activities and the prevailing agricultural types around the world and their relation to the different branches of geography.
- 2. Skills
 - 2.1 Differentiate among the human factors affecting the agricultural production and relation between man and environment through learning about types of good agricultural practices.
 - 2.2 Employ the quantitative methods, maps, and GISs in analyzing and interpreting spatial information.
- 3. Values
 - 3.1 Appreciate teamwork principle and bear individual and collective responsibility.

<https://www.iau.edu.sa/en/courses/geography-of-agriculture-1>

3. Research by IAU on Life on Land in the Web of Science Database

2022-2024

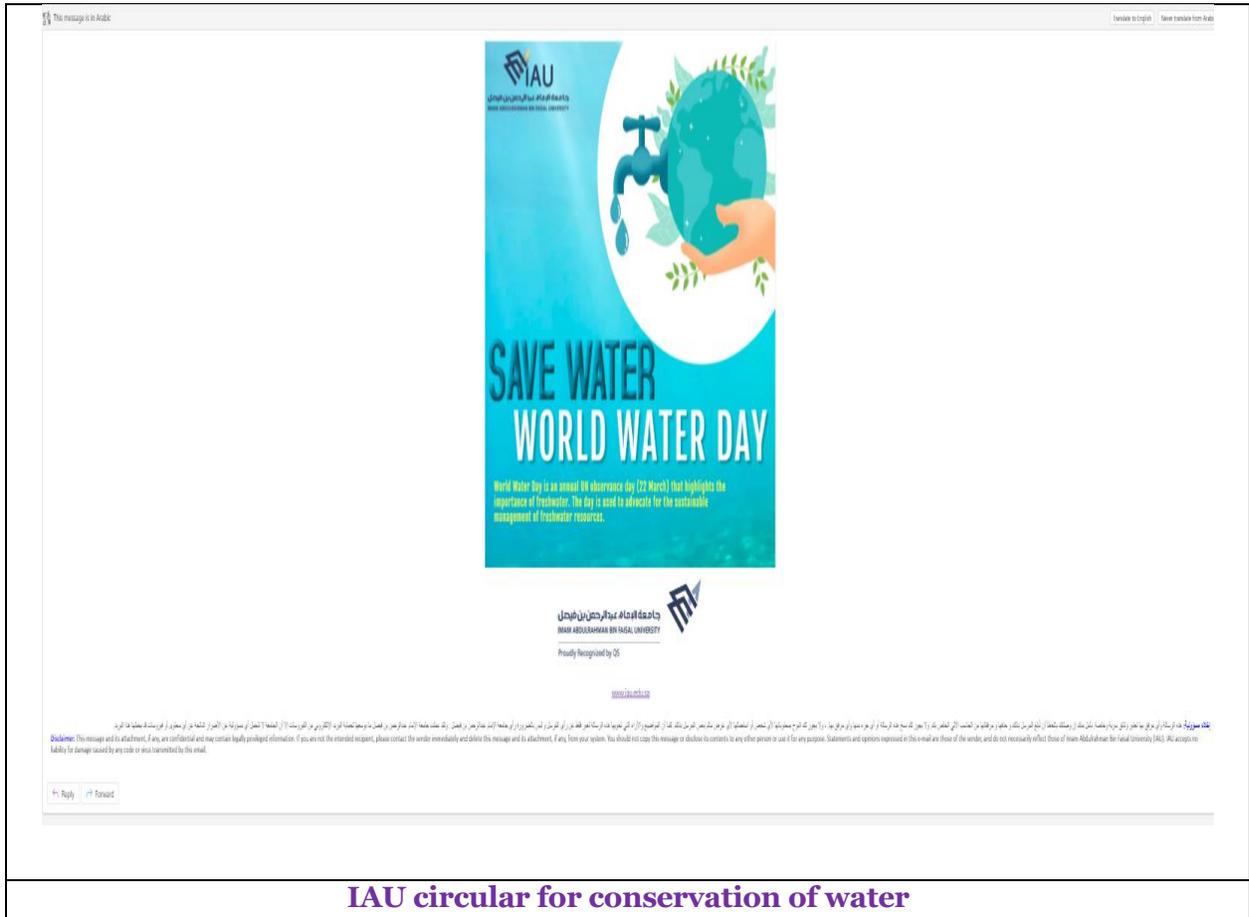
Research Title	Link	Keywords
A Conceptual Framework of Public Participation Utilization for Sustainable Urban Planning in the Kingdom of Saudi Arabia	DOI 10.3390/su141811470	Urban Planning
Investigating the prospect of e-participation in urban planning in Saudi Arabia	DOI 10.1016/j.cities.2022.104186	Urban Planning
Spatial Analysis and Interpretation of Geological and Geotechnical Database: A Case Study of Riyadh, Saudi Arabia	DOI 10.1007/s13369-024-09244-7	Geology
Geochemistry study of soil affected catastrophically by tsunami disaster triggered by 2004 Indian Ocean earthquake using a fourth harmonics ($\lambda=266$ nm) Nd:YAG laser induced breakdown spectroscopy	DOI 10.1016/j.arabjc.2022.103847	Soil
Coastal Flood risk assessment using ensemble multi-criteria decision-making with machine learning approaches	DOI 10.1016/j.envres.2023.118042	Coast
Wildland-urban interface fire ashes as a major source of incidental nanomaterials	DOI 10.1016/j.jhazmat.2022.130311	Wildland-Urban interface
Assessment of data mining, multi-criteria decision making and fuzzy-computing techniques for spatial flood susceptibility mapping: a comparative study	DOI 10.1080/10106049.2022.2076910	Flood



Tree species, mycorrhizal associations, and land-use history as drivers of cohesion in soil biota communities and microbe-fauna interactions	DOI 10.1016/j.foreco.2024.121827	Tree-species
Prospects of earthworm coelomic fluid as a potential therapeutic agent to treat cancer	DOI 10.1007/s10555-023-10148-5	Earthworm
Arbuscular mycorrhizal fungi improve tolerance of wheat plants under soil Europium contamination	DOI 10.1007/s11104-024-06936-9	Soil

4. Water Conservation Program at IAU Campus

Water Conservation Program Implementation at IAU





Place for Rainwater Harvest at IAU, KSA



Place for Rainwater Harvest at IAU, KSA



Brakish water well Reverse osmosis desalination, IAU, KSA



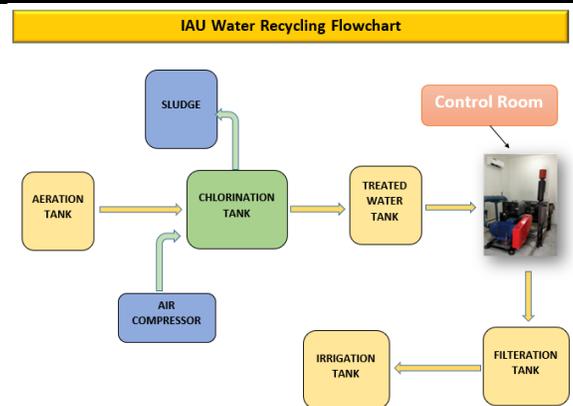
Displaying "Save Water" slogan in IAU Cafeterias and washrooms



Water treatment plant at IAU



On campus biological water treatment plant

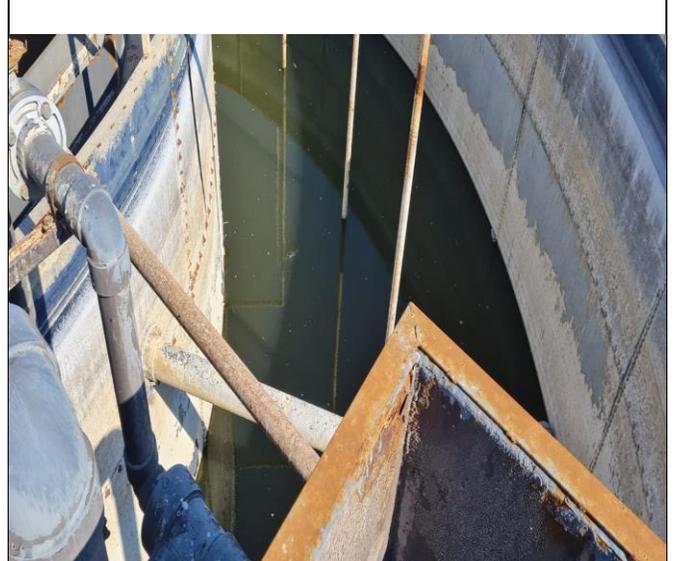


Water Recycling Flow Chart

Water Recycling Program (IAU, KSA)

5. Water Collection, Storage & Utilization at IAU

Water Recycling Program Implementation at IAU



Water recycling tanks

Water Treatment facility – Desalination and water processing tanks for drinking



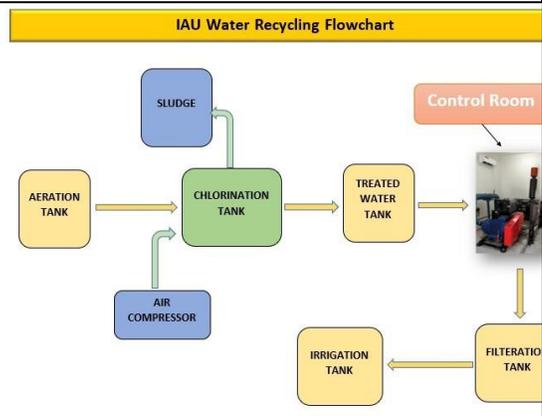
Water treatment plants



Water recycling tanks in Googlemaps



On campus biological water treatment plant at IAU



Water Recycling Flow Chart in IAU

Water Recycling Program
(IAU, KSA)



Water Pollution control system at IAU



Recycled water processed in the tanks to protect ground water contamination

Consumption of Treated Water



Consumption of Treated Water in Water Dispensers at IAU



Treated water consumption at dispensers installed in every college building

Description:

The water treatment plant is positioned within the IAU campus. This plant provides the grey water and brown used for flushing toilets and washing basins. Then, the water is collected at a central on-campus wastewater treatment plant (WWTP). This WWTP carries out a biological aeration process to lessen the number of water pollutants that make the water to be suitable for re-use.

The capacity of the WWTP is 1200 m³ per day. It consists of two working tanks and one sapre of capacity 600 m³. Water reuse is performed by mixing 1200 treated WWTP with + 2800 m³ of well water (TDS 10%). The total = 3600 m³ per day, which is the amount of reused water for greening and irrigation.

As per the present condition of IAU, we have framed a formal policy for 100% water recycling program, and that recycled water is used for toilet flushing, watering plants, etc.

The IAU is reusing 100% treated wastewater on campus with zero discharge since water is scarce in this region.

Water Efficient Appliances Usage (e.g. hand washing taps, toilet flush, etc.)



Description:

The water used in IAU campus is entirely generated from RO on campus system that intake is from ground water wells.

The water generated is combined with brackish water to raise the amount of water utilized for washing and flushing toilets.

Consumption of treated water at IAU



Treated water used in Water Fountains



Plant beds and trees consuming treated water



Consumption of treated water for various plants and trees



1- Consumption of treated water dispensers installed in every college building



2- Recycled water used for garden sprinkler system



Recycled water is utilized for Irrigation and for garden sprinkler system

Consumption of treated water, Imam Abdulrahman Bin Faisal University, Saudi Arabia



Treated water is consumed in all Washrooms across IAU

Description

The treated water is utilized by students and staff. Treated water dispensers are installed in each college building for consumption. Moreover, recycled water is used for Irrigation and garden sprinkler system in IAU, Saudi Arabia.

6. Water pollution control in Campus area.



Water Pipes periodically inspected and repaired for any leaks or worn outs



Monitoring Water pipes regularly for preventing leakages and water pollution

The maintenance department at IAU periodically check the water Pipes, they inspected and repaired it in case of any leaks or worn outs.



Water meter to regularly check water quality



Water Desalination plant at IAU



Water treatment plant at IAU



Water Pollution control system at IAU



Recycled water processed in the tanks to protect ground water contamination

7. Clean Energy through Solar Panels



Solar Plants at IAU Open Spaces for Renewable Energy



Solar Panels installed all over the campus to provide energy for the purposes of lighting, heating, cooling, running university laboratories, etc.



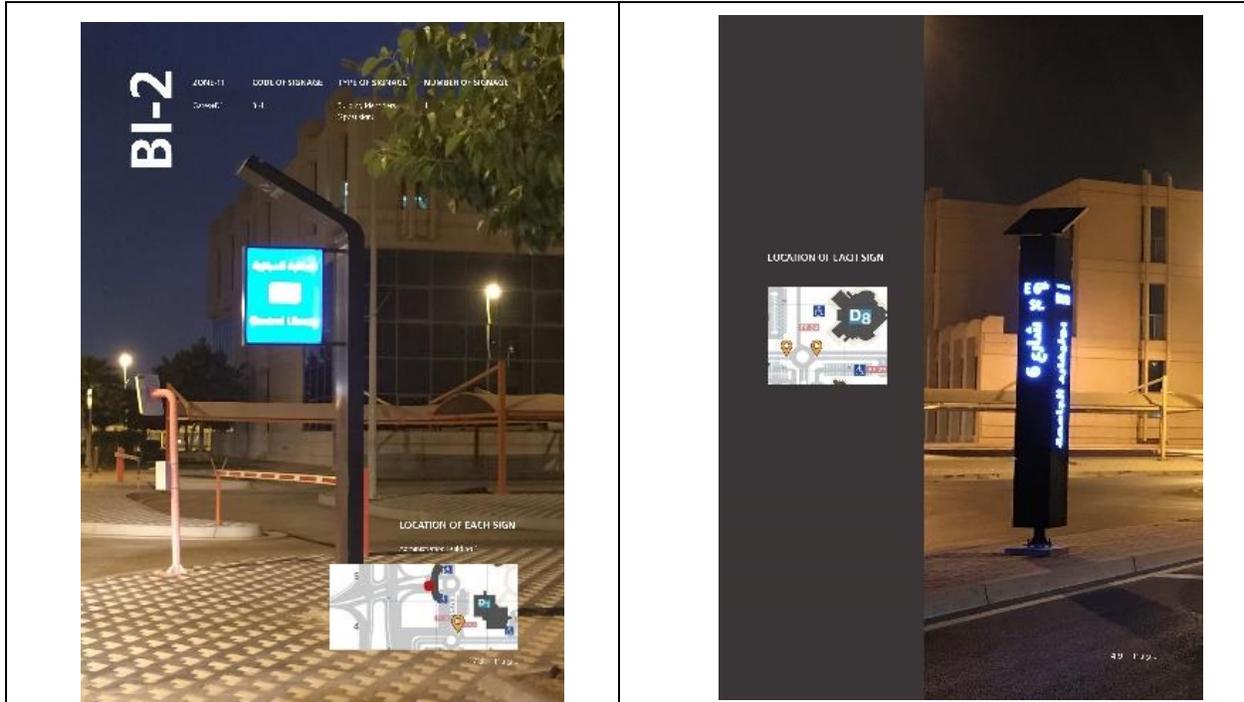
Solar Panel as substitute to conventional electricity installed in the campus as part to reducing Greenhouse gas emission



Solar Panel as substitute to conventional electricity installed in the campus as part to reducing Greenhouse gas emission



Wind power plants installed at IAU campuses



NIGHTVIEW OF SOLAR OUTDOOR SIGNAGE IN IAU CAMPUS



DAY-VIEW OF SOLAR OUTDOOR SIGNAGE IN IAU CAMPUS

CM-2

ZONE-1	CODE OF SIGNAGE	TYPE OF SIGNAGE	NUMBER OF SIGNAGE
The way from the gate of the campus until the design building	CM2	Way from the gate of the campus until the design building	1



LOCATION OF EACH SIGN

CM-2 The way from the gate of the campus until the design building



1 Page

DR-1

ZONE-1	CODE OF SIGNAGE	TYPE OF SIGNAGE	NUMBER OF SIGNAGE
The way from the gate of the campus until the design building	DR1	Way from the gate of the campus until the design building	1

LOCATION OF EACH SIGN

DR-1 The way from the gate of the campus until the design building




2 Page

LOCATION OF EACH SIGN




3 Page

BI-2

ZONE-1	CODE OF SIGNAGE	TYPE OF SIGNAGE	NUMBER OF SIGNAGE
The way from the gate of the campus until the design building	BI2	Way from the gate of the campus until the design building	1

LOCATION OF EACH SIGN




4 Page

NIGHTVIEW OF SOLAR OUTDOOR SIGNAGE IN IAU CAMPUS



OUTDOOR SIGNAGE IN C1-EAST CAMPUS



Example of Energy Efficient Appliances Usage: Solar energy for map direction and board and light outside

EXAMPLES OF SIGNAGE & SOLAR LIGHTS IN IAU CAMPUS

8. Elements of Green Building Implementation

Elements of Green Building Implementation as Reflected in All Construction and Renovation Policies

All buildings of the IAU Campus fulfil the requirements of the Saudi Building Code National Standard for construction of buildings, whereby many of our building follow the international building standard code, which is of much higher standard.

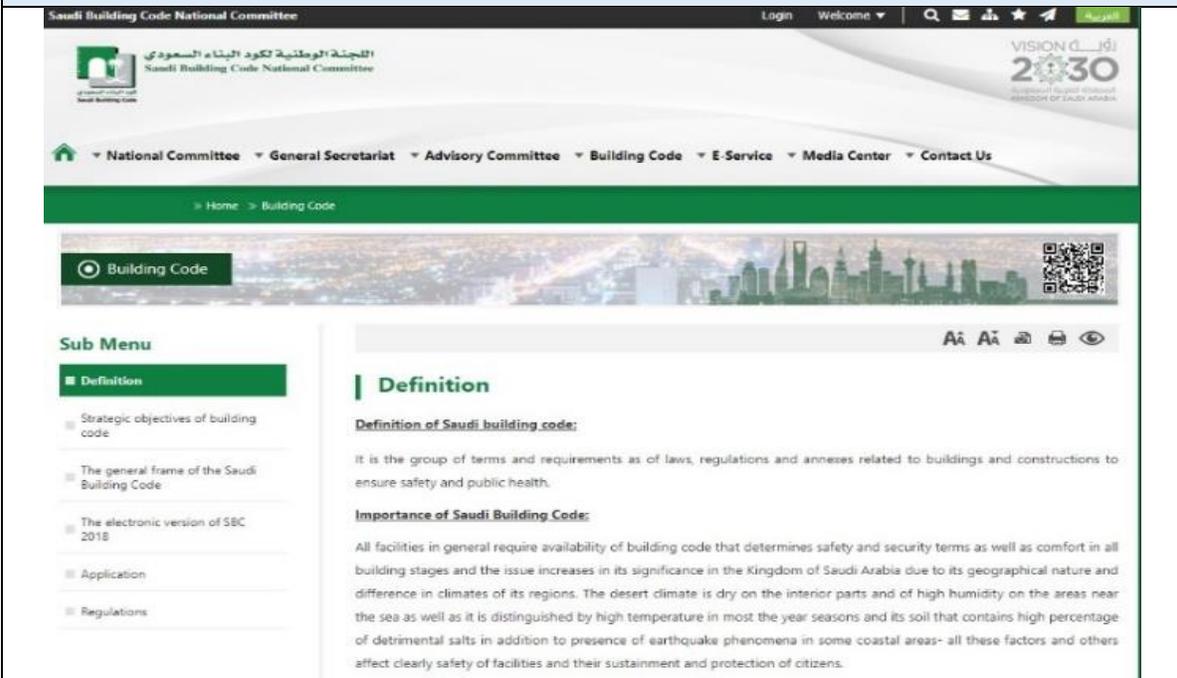
As stated in Saudi Building Code that "all facilities in general require availability of building code that determines safety and security terms as well as comfort in all building stages and the issue increases in its significance in the Kingdom of Saudi Arabia due to its geographical nature and difference in climates of its regions. The desert climate is dry on the interior parts and of high humidity on the areas near the sea as well as it is distinguished by high temperature in most the year seasons and its soil that contains high percentage of detrimental salts in addition to presence of earthquake phenomena in some coastal areas- all these factors and others affect clearly safety of facilities and their sustainment and protection of citizens."

As far as Green Building implementation is concern, one of the steps IAU had started implemented that is the cultivation of invented nono - plants in IAU as a tool for removal of air pollutants.

In addition, all irrigation System in Imam Abdulrahman Bin Faisal University (IAU) is connected and treated with wastewater.



Natural Ventilation in the class room and office corridors



IAU follow Saudi Building Standards in all his buildings

9. Introducing E-scooters: Promoting a sustainable transportation



IAU Launching Smart Mobility Service

H.E, President of IAU, Dr. Abdullah bin Muhammad Al-Rubaish, inaugurated the pilot phase of the smart mobility service for generating clean energy inside the university campus by bicycles and electric scooters through (WAYZ) application, on Al-Rakah campus.



An initiative IAU GREEN without CO2, inaugurated by H.E. the President of IAU

E-Scooter initiative in IAU, in an effort to reduce Greenhouse gas emission

DAMMAM — Dr. Abdullah Al-Rubaish, president of Imam Abdulrahman Bin Faisal University, Dammam, launched the Smart Mobility initiative at the lobby of the College of Architecture and Planning on the university campus here on Wednesday.

The initiative, which was commissioned by the Deanship of Community Service and Sustainable Development, comes as part of using clean energy within the university campus and make available its health benefits to the members of the campus community.

Dr. Al-Rubaish said that the university launched the pilot phase of the smart mobility service so as to achieve the Kingdom's Vision 2030 towards providing new opportunities for transportation.

"This is through generating clean energy within the university campus by bicycles and e-scooters with the WAYZ application, which will facilitate for its users the rapid mobility feature at the university through an electronic mobile application," he added.

For her part, Dr. Fatima Bint Abdullah Al-Mulhim, head of the Deanship of Community Service and Sustainable Development, said that the new experiment is based on using clean energy for the mobility inside the university campus.

"We launched earlier the initiative of 'Green University without Carbon,' under which these scooters, which are charged and operated with solar energy will be used. It is a service available to all educational and administrative staffers of the university as well as to male and female students," she said.

She noted that it has many health benefits, including the fight against obesity and the promotion of being environmentally friendly and serving the members of society with its environment.

According to Dr. Fatima, the goal is also to be sustainable through the presence of solar-powered stations.

"Today is the beginning of an experimental start and work is continuing in order to equip stations to charge these devices powered by solar energy.

"All the university people, including male and female students, administrators and members of the educational staff, as well as university security personnel, will benefit from this service.

This will facilitate their freedom of movement without cars, and the initiative received a lot of encouragement and demand," she said while noting that safe corridors have been provided inside the university campus.

"This is one of our priorities to ensure the safety of the beneficiaries of this service, and it will be included in the first

stage inside the university campus until the infrastructure and private roads are provided at the university for this type of initiative that is reflected in reducing the proportion of carbon.

“Now we are in the process of working with faculty members who obtained a patent in measuring carbon levels in the atmosphere, and we aim for the measurements and they will be returned according to the research scheme prepared for that,” she added.

10. Planting more Trees in the Campus



Conservation of plants and green vegetation at IAU Campus



Flowering plants planted at IAU campus



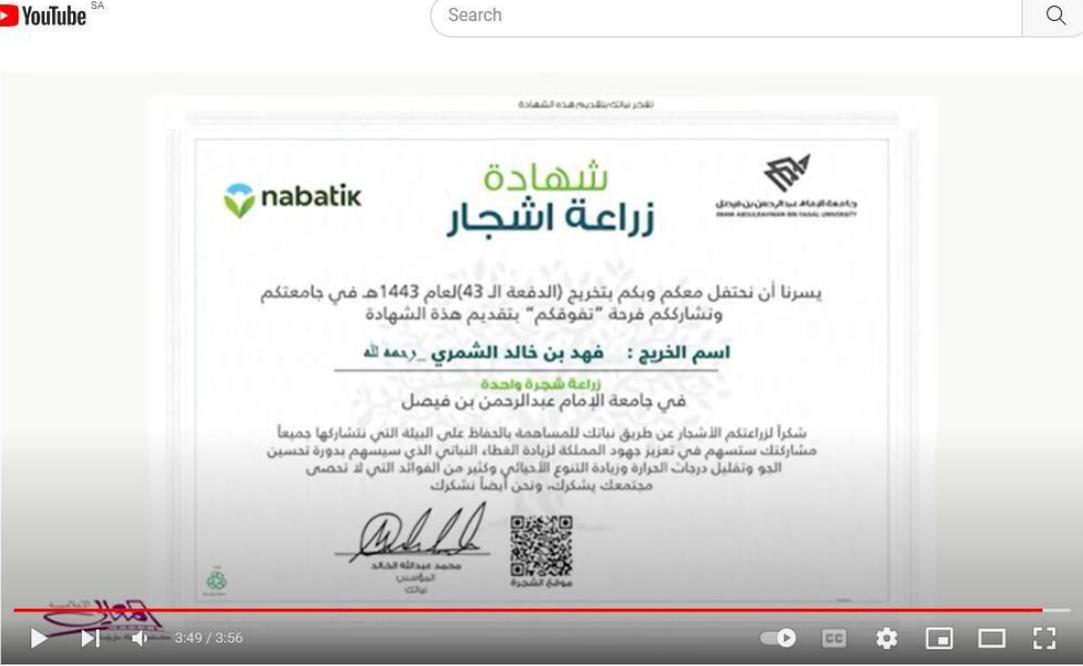
Saplings Planted and watered regularly (Recycled water) at IAU



Let's Make Green campaign by IAU

Participation of female students of the Environmental Engineering Department of College of Engineering, Imam Abdulrahman Bin Faisal University, in the “**Let's Make Green campaign**” launched by the National Center for Vegetation Cover Development and Combating Desertification by planting 6,000 mangrove seedlings on the shores of the Arabian Gulf in Qatif Governorate.

https://twitter.com/CE_I AU_SA/status/1607302669139312641



تفقد نباتك بتقديم هذه الشهادة

شهادة زراعة اشجار

يسرنا أن نحفل معكم وبكم بتخريج (الدفعة الـ 43) لعام 1443 هـ. في جامعتكم ونشارككم فرحة "تفوقكم" بتقديم هذه الشهادة

اسم الخريج : فهد بن خالد الشمري - رحمه الله

زراعة شجرة واحدة
في جامعة الإمام عبدالرحمن بن فيصل

شكراً لزراعتكم الأشجار عن طريق نباتك للمساهمة بالحفاظ على البيئة التي نشاركها جميعاً
مشاركتك ستسهم في تعزيز جهود المملكة لزيادة الغطاء النباتي الذي سيسهم بدوره تحسين
الدو وتقليل درجات الحرارة وزيادة التنوع الأحيائي وكثير من الفوائد التي لا تحصى
محتفكم بشركتكم، ونحن أيضاً نشكركم

محمد عبدالله الخالد
المؤسس
نباتك

موقع الشجرة

إهداء من جامعة الإمام عبدالرحمن بن فيصل لأبنائها وبناتها المتميزين من خريجي دفعة 43

Certificate for planting and monitoring the plant thru Nabatik platform



The recording of planting activities using NABATIK platform, in cooperation with Ministry of Environment, Water and Agriculture, Eastern Province, Saudi Arabia



Awareness Program on Plant Pests by KFHU, IAU



Lecture by Prof. Dr. Mohammed Al-Shahrani, KFHU, IAU on Plant Pests

King Fahd Hospital of the University (KFHU) affiliated to the Imam Abdulrahman Bin Faisal University (IAU) represented by the Green Spaces Department, organized an awareness lecture entitled: **“Common Plant Pests and Methods of Combating Them in Correct and Safe Ways,”** presented by representatives from the National Center for the Prevention and Control of Plant Pests and Animal Diseases, WeqaaCenter.

https://x.com/IAU_KFHU/status/1712364692184695184

https://twitter.com/IAU_KFHU/status/1712363110915256398

(Green University without Carbon) Under the Slogan "Towards a Sustainable Environment"



Afforestation Initiative Led by IAU

In order to integrate with the national efforts for sustainable development and as an extension for the pioneering initiatives in this field, as (Green Saudi Initiative) and (Green Middle East Initiative), Imam Abdulrahman bin Faisal University launched (Green University without Carbon Initiative) aiming to plant thousands of seedlings and trees with participation of IAU employees and students in Campaigns for mass afforestation in the university areas over Dammam, Khobar, Qatif and Jubail, to reduce carbon emissions, as the first initiative of its kind at the level of universities in the Kingdom, to consolidate the concept of sustainability inside campuses at the level of the local community.



Encourage environment caring by planting tree by H.E. The President of IAU



Big Trees and plants: Family Medicine



Big Trees: On the pathway



Planted trees & plants: University Hospital area



Natural Trees & plants at the entrance of IAU



Big Trees Near Parking Slots

Big trees on the pathway outside IAU buildings

Big Trees at Orientation Studies - Medical Track



Big Trees at entrance of IAU main gate

Natural Trees & Plants at Student Restaurant 1

11. Energy Efficient Appliances Usage

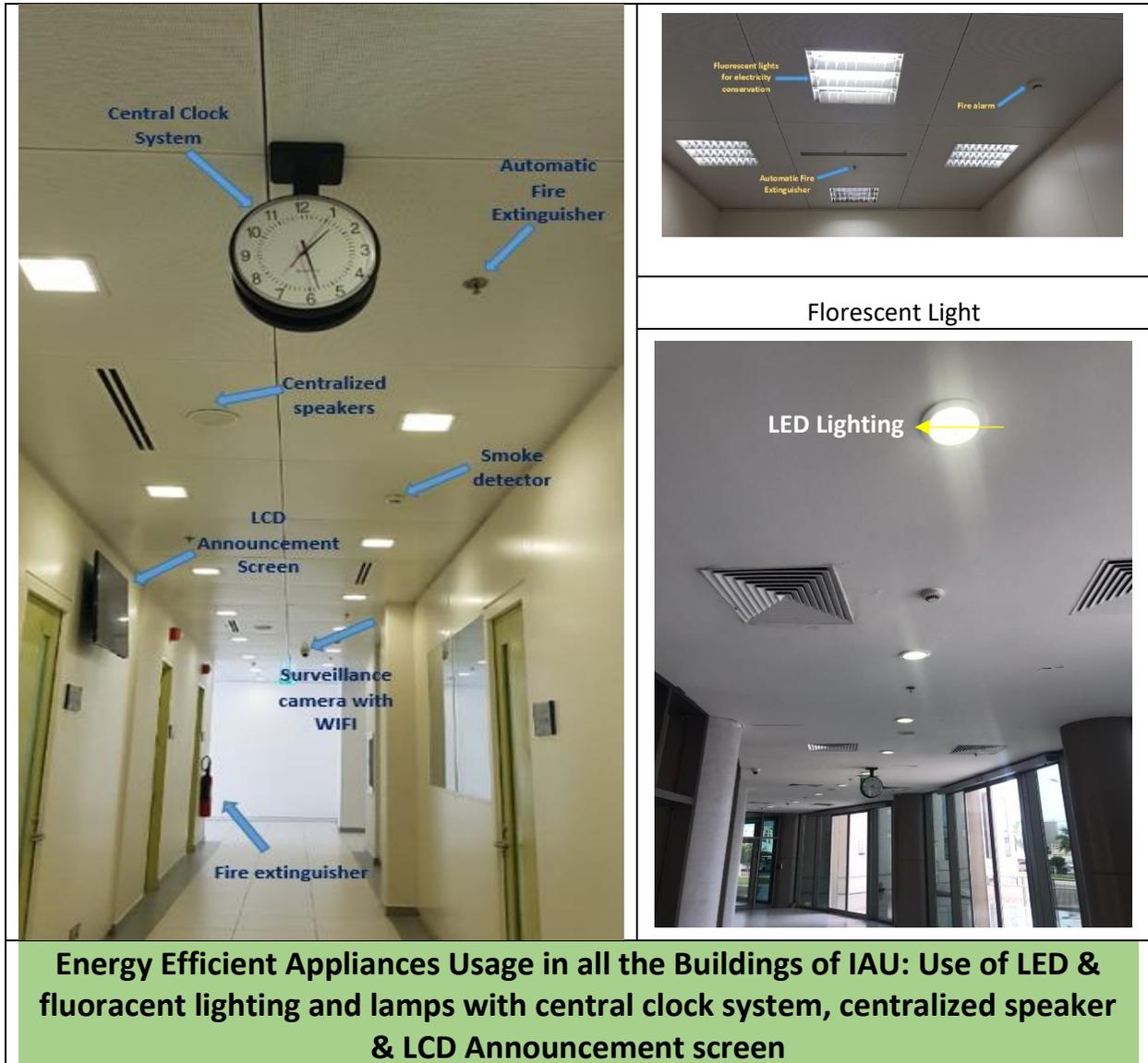


Automatic Motion
Sensor

Automatic Motion Sensor installed in all IAU buildings to reduce electricity consumption



IAU Advertisement : Reminder to Turn off the AC to conserve Energy



Energy Efficient Appliances Usage in all the Buildings of IAU: Use of LED & fluorescent lighting and lamps with auto shut-off sensors. Central clock system, centralized speaker & LCD Announcement screen in each building.

12. IAU participates in Earth Hour by turning off buildings' lights



The poster features a dark blue background with a view of Earth from space. In the top left, the '60 EARTH HOUR' logo is displayed in green and white. To its right is the IAU logo and name in Arabic and English. The main text in Arabic reads 'تشارك جامعة الإمام عبد الرحمن بن فيصل في الحدث البيئي العالمي السنوي' (Participating in the annual global environmental event). Below this, the title 'ساعة الأرض | Earth Hour' is written in large white letters. A white box at the bottom center contains the date and time: 'Sat, Mar 25, 2023 8:30 PM - 9:30 PM'.

“Earth Hour” – Global Environmental Event followed by IAU

IAU followed the global environmental event “Earth Hour”. For this event, all unnecessary lights and appliances will be turned off for 60 minutes on 25 March 2023 (8.30-9.30 PM) for the sake of the Earth

https://twitter.com/IAU_KSA/status/1639624859494805504

