



Template for Evidence(s) UI GreenMetric Questionnaire

University : Allama Iqbal Open University
Country : Pakistan
Web Address : www.aiou.edu.pk

[1] Energy and Climate Change (EC)

[2.1] Energy Efficient Appliances Usage



Use of LED lighting



Energy Efficient Inverters

Description:

Allam Iqbal Open University intends to realize further energy savings by paying close attention to energy management. All parts of the organization can assess their own energy consumption and realize their own energy-saving potential by means of, for example, insulation, LED lighting and the deployment of sustainable technology.



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Details:

Appliance	Total Number	Total number energyEfficient appliances	Percentage
LED Lamp	6700	6200	92.54%
Fan	2360	2360	100%
Inverter Air Conditioners	665	605	90.98%
Energy efficient Automatic washing Machines	22	22	100.00%
		Average Percentage	95.88%

http://oric.aiou.edu.pk/?page_id=2285

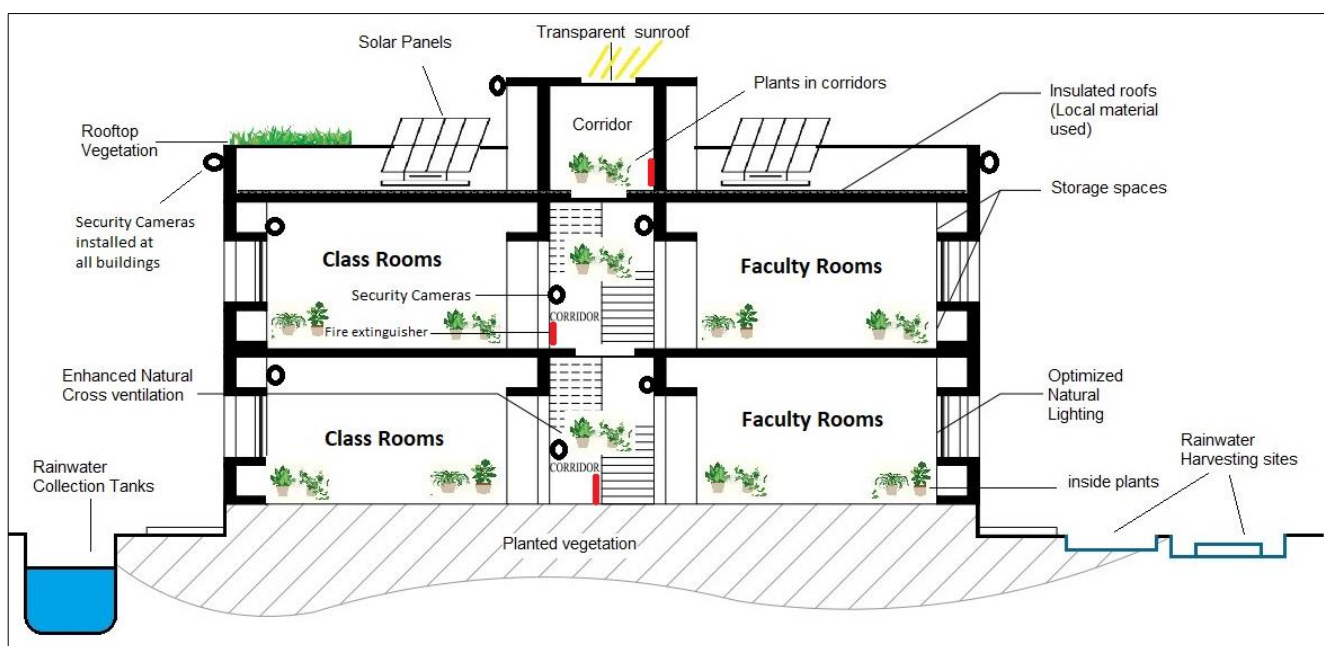


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[2] Energy and Climate Change (EC)

[2.3] Smart Building Implementation



Each building at AIOU possess smart building features like security cameras, energy efficient appliances, water efficient appliances, natural lighting, lighting system, cross ventilation, fire extinguishers etc

No.	Name	Place															Building Area (m ²)				
			automation		safety				energy		water		Indoor environment					lighting			
			B1	B2	S1	S2	S3	S4	E1	E2	A1	A2	I1	I2	I3	I4		L1	L2	L3	L4
1	Allam Iqbal Open University Main Campus	Islamabad, Pakistan			X	X	X			X	X	X	X			X	X	X		82038 m ²	
2	Allam Iqbal Open University All Regional Campuses	All over Pakistan			X	X	X			X	X					X	X	X		54913 m ²	
Total																				136951 m²	

Please compile one row for each building (or homogeneous part of it) by ticking with a "X" for each requirement



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Smart building implementation $\frac{\text{Total Smart Building Area}}{\text{Total Building Area}} \times 100\%$

***Total Building Area: 136,951 m²**

$$\frac{136,951 \text{ m}^2}{136,951 \text{ m}^2} \times 100\% = 100\%$$

Note: All buildings were classified as smart buildings as they possess a minimum of 5 features.

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Main Campus



DG Khan Campus



Faisalabad Campus



Islamabad Regional Campus



Karachi Campus G



Lahore Campus



Multan Campus



Rawalpindi Campus





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[2] Energy and Climate Change (EC)

[2.5] Renewable Energy Sources in Campus



Solar Panels installed at main campus and some regional campuses



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Combined Cooling Heating and Power Integration Unit



Energy efficient inverters (Combined Cooling Heating and Power Integration Unit)



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Description:

1. The combined cooling and heating units, inverters, are installed in all regional campuses as well as in main campus providing cooling and heating.
2. Solar power stations are installed at main campus and some regional campuses.
3. On roofs of administration building, library, laboratory building, school factories and other teaching buildings and dormitories, solar PV power station of total 1.6MW is installed.

http://oric.aiou.edu.pk/?page_id=2292

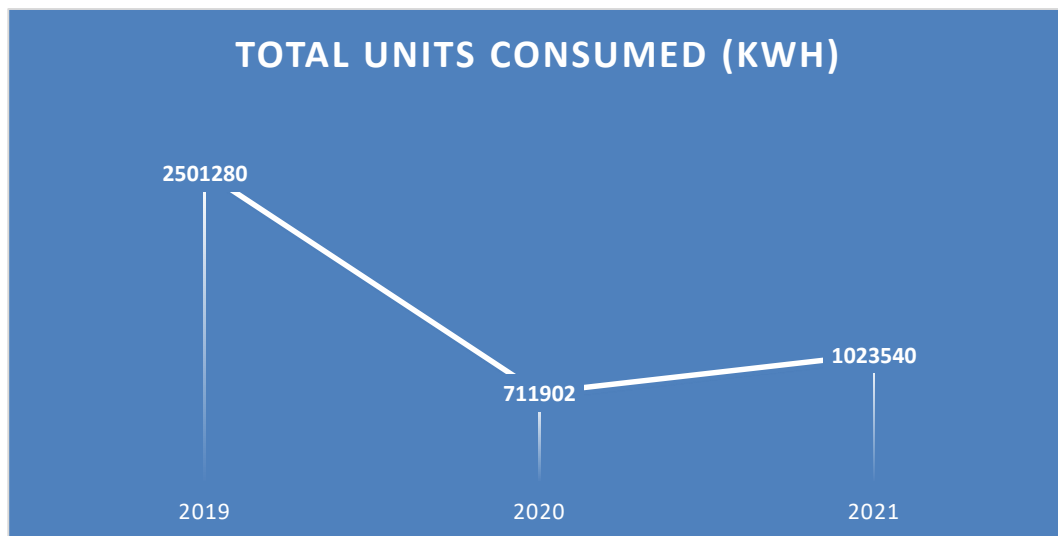


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[2] Energy and Climate Change (EC)

[2.6] Electricity Usage per Year (in Kilowatt hour)



Description:

On the main campus area of Allama Iqbal Open University, electricity is used for lighting, cooling, heating and laboratory appliances. The total electricity usage at all AIOU Campuses in 2021 is 1,023,540 kWh.

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[2] Energy and Climate Change (EC)

[2.8] Ratio of renewable energy production divided by total energy usage per year



Biodiesel Combined Cooling Heating and Power Integration Unit



Energy efficient inverters (Combined Cooling Heating and Power Integration Unit)



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Solar Panels installed at main campus and some regional campuses



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Description:

No	Renewable Energy	Production (in kWh)
1	Solar panel	95,600
2	Biodiesel	5,600
3	Combined Heating and Cooling	40,400
	Total	141,600

$$=141,600 / 1023540 \text{ (Electricity usage)} = 13.83 \%$$

http://oric.aiou.edu.pk/?page_id=2295
http://oric.aiou.edu.pk/?page_id=2292

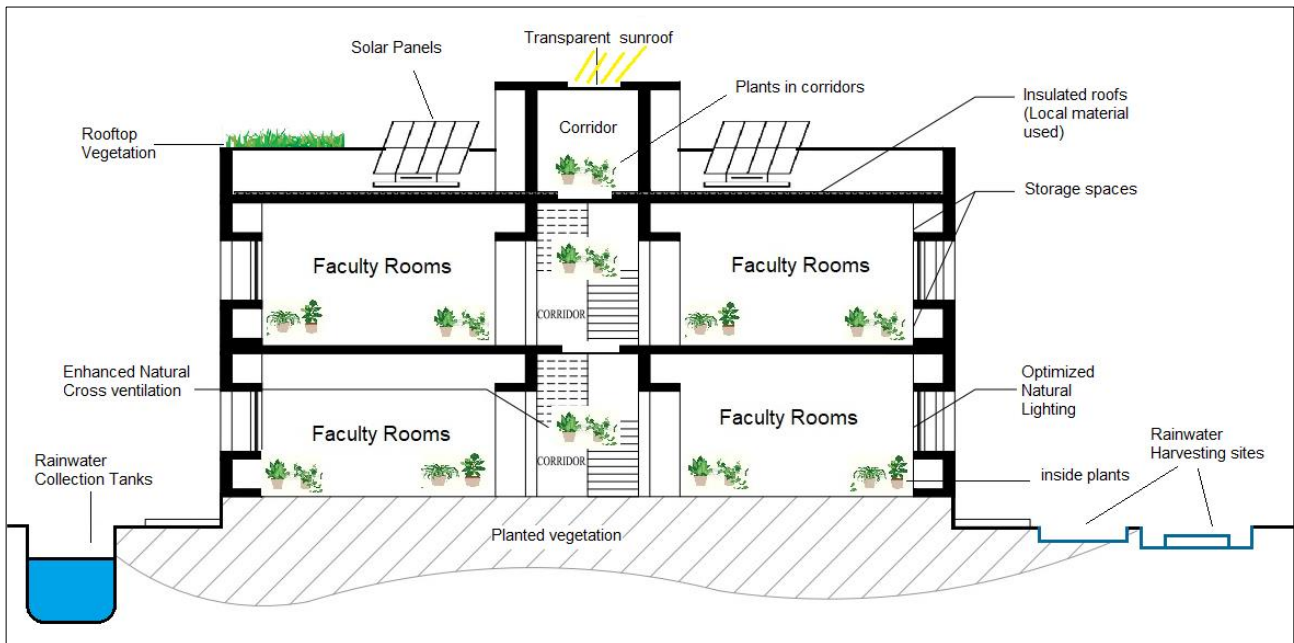


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[2] Energy and Climate Change (EC)

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



Overview of Green Technologies implemented at the Faculty building, Main Campus, Islamabad



Elements of Green Building Implementation as Reflected in different buildings



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Description:

All buildings are designed and constructed by following necessary elements of Green Building.

1. All buildings are open to full natural daylight
2. Central courtyards are developed to give all rooms full daylight coverage
3. Big windows are structured in all buildings for natural ventilation and daylight
4. Modern methods have been taken into consideration in terms of facade insulation and it is aimed to minimize heat loss.
5. Solar Panels are installed to smart energy production.
6. Non-toxic materials and products have been used to improve indoor air quality, and reduce the rate of asthma, allergy and sick building syndrome
7. Rainwater is stored on surface for future use.
8. Rainwater harvesting sites have been developed and are used to artificially recharge the underground water system
9. Partial rooftop vegetation is adopted.
10. Atleast one staff member from each building is responsible to manage the energy usage in that building

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[2] Energy and Climate Change (EC)

[2.10] Greenhouse gas emission reduction program



1. Zero emission vehicles for in-campus shuttle service



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2. Out of Campus parking of private vehicles



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3. Public facilitation center at the gate



4. Carbon free Zones



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5. Use of Renewable energy sources



6. University is "No Smoking" Zone



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7. Metro station outside University Campus



8. Shared commuting service is provided by university

Description:

1. Department of Agricultural Sciences, Allama Iqbal Open University, Islamabad is practicing Environment-Friendly technologies in raising orchards, crop production, Flower nursery raising, and vegetable production. Moreover, zero tillage technologies are being carried out to stop CO₂ emission from the soil surface, Mulching techniques are also being adopted for soil and water conservation.
2. Outdoor car parking for private vehicle to reduce vehicle in campus
3. Using renewable energy for electricity thus reducing purchased electricity
4. Carbon free Zones where no vehicles are allowed
5. Public facilitation center at the gate
6. University is declared as "No Smoking" Zone
7. Metro Bus stations outside university to promote shared transportation
8. Shared commuting service is provided by university
9. Program is implemented to reduce the use of Air Conditioners. The Air conditioning is allowed only after 11am to 4 pm.
10. Travel Grants are allowed to faculty members once in two years to reduce the air travel.
11. Since 2020 most of meetings, conferences and workshops were attended online by our faculty thus reducing the GHG emission.
12. The program for replacement of traditional ACs installed at the campus with inverters is being implemented.
13. No garbage is burnt inside the campus and is dumped at City Administration designated sites
http://oric.aiou.edu.pk/?page_id=2302



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[2] Energy and Climate Change (EC)

[2.11] Please Provide the Total Carbon Footprint (CO₂ emission in the last 12 months, in metric tons)

Option 2: Recommended by UI GreenMetric

CO₂ (electricity)

$$\begin{aligned} &= \frac{\text{electricity usage per year (kWh)}}{1000} \times 0,84 \\ &= \frac{1023540 \text{ kWh}}{1000} \times 0,84 \\ &= 859.777 \text{ metric tons} \end{aligned}$$

CO₂ (bus)

$$\begin{aligned} &= \frac{\text{number of shuttle bus in your university} \times \text{total trips for shuttle bus service each day} \times \text{approximate travel distance of vehicle each day inside campus only (KM)} \times 240}{100} \times 0,01 \\ &= \frac{2 \times 20 \times 4 \times 240}{100} \times 0,01 \\ &= 3.84 \text{ metric tons} \end{aligned}$$

CO₂ (cars)

$$\begin{aligned} &= \frac{\text{number of cars entering your university} \times 2 \times \text{approximate travel distance of vehicle each day inside campus only (KM)} \times 240}{100} \times 0,02 \\ &= \frac{360 \times 2 \times 4 \times 240}{100} \times 0,02 \\ &= 138.24 \text{ metric tons} \end{aligned}$$

CO₂ (motorcycle)

$$\begin{aligned} &= \frac{\text{number of motorcycle entering your university} \times 2 \times \text{approximate travel distance of vehicle each day inside campus only (KM)} \times 240}{100} \times 0,01 \\ &= \frac{290 \times 2 \times 4 \times 240}{100} \times 0,01 \\ &= 55.68 \text{ metric tons} \end{aligned}$$

CO₂ (total)

$$\begin{aligned} &= 859.777 + 3.84 + 138.24 + 55.68 \\ &= 1057.534 \text{ metric tons} \end{aligned}$$

Carbon footprint in 2021 = 1057.534 metric tons

AIOU Total Carbon Footprint (UI GreenMetric)

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[2.13] Number of the innovative program(s) in energy and climate change



Use of Renewable energy sources



Rainwater harvesting sites to save rainwater for later consumption



Zero Emission Buses serving students and public inside campus



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The screenshot shows a web interface for managing vouchers. It includes search filters for Supplier Name, Voucher Style, Voucher Source, Approval Status, Post Status, and Payment Selection Status. Below the filters is a search button and a table of search results.

Business Unit	Voucher ID	Invoice Number	Gross Invoice Amount	Payment Amount	Invoice Date	Short Supplier Name	Supplier ID	Supplier Name	Voucher Style	Voucher Source	Approval Status	Post Status	Payment Selection Status
CPS	00012769	HRS EMP-3964 JUL-22 TO DEC-22	246982	246982	07/22/2022	EMP-3964-001	HRS0000029	Ms. Halima Raza	Regular	Online	Approved	Posted	Paid
CPS	00009185	HRS EMP-3964 PHASE 2	112468	112468	04/04/2022	EMP-3964-001	HRS0000029	Ms. Halima Raza	Regular	Online	Approved	Posted	Paid
CPS	00007168	HRS EMP-3964 PHASE 2	123441	123441	01/27/2022	EMP-3964-001	HRS0000029	Ms. Halima Raza	Regular	Online	Approved	Posted	Paid
CPS	00000072	HRS EMP-3964	171444	171444	07/13/2021	EMP-3964-001	HRS0000029	Ms. Halima Raza	Regular	Online	Approved	Posted	Paid

Campus Management System/ ERP has been introduced for office automation

The screenshot shows the homepage of the AAGHI LMS Portal. It features a navigation menu with links for HOME, AAGHI LMS PORTAL, LIBRARY, TRAINING, and CONTACT. The main content area includes a large image of a desk with a computer monitor and a chair. Below the image is the text "AAGHI LMS PORTAL" and a "Login" button. There are also four service tiles: "Spring 2022" (Online Workshops + Assignment Submission), "Autumn 2022" (Face to Face Programmes), "LMS Portal" (International Students), and "Windows/IOS/Andriod" (Microsoft Teams). Each tile has a "Login" or "Download Now" button.

Aaghi LMS portal for online classes and assignment submission



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Carbon free Zones



Energy savers being used to save energy consumption



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Pedestrian bridge to lower the carbon production by vehicles



“Plant a tree program”



AIU Olive tree plantation drive at Main Campus, Islamabad.



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Spring Tree Plantation Campaign

Description:

1. Program "Use of Renewable Energy Sources" for energy production at all campuses
2. "Facilitation at the Gate" program is implemented to ensure entrance of minimum number of visitors
3. Most of academic activities are conducted online
4. Most of seminars, conferences, workshops were shifted to online mode
5. Bulbs replaced by energy savers to save energy consumption.
6. Pedestrian bridge to lower the carbon production by vehicles
7. No carbon zones developed to reduce production of carbon
8. "Plant A Tree" program which is implemented in all the campuses
9. AIU Olive tree plantation drive at Main Campus
10. Spring Tree Plantation Campaign on the start of Spring every year
11. Zero Emission Buses serving students and public inside campus
12. Campus Management System/ ERP has been introduced for office automation
13. Aaghi LMS portal for online classes and assignment submission

http://oric.aiou.edu.pk/?page_id=2316



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[2.14] Impactful university program(s) on climate change



“Plant a tree program”



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Use of LED lighting



AIU Olive tree plantation drive at Main Campus, Islamabad



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Energy Efficient Inverters



Zero Emission Buses serving students and public inside campus

USER Voucher

Supplier Name begins with []
Voucher Style = []
Voucher Source = []
Approval Status = []
Post Status = []
Payment Selection Status = []
 Case Sensitive

Search Clear Basic Search Save Search Criteria

Search Results

View All

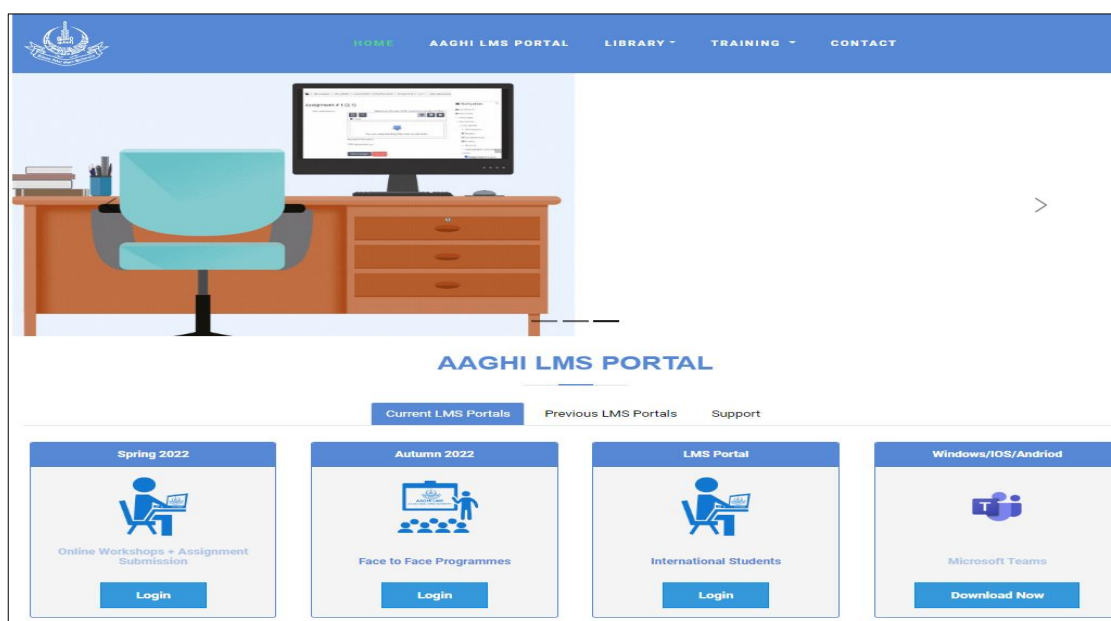
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CPS	00007168	HRS EMP-3964 PHASE 2	123441	123441	01/27/2022	EMP-3964-001	HRS0000029	Ms. Halima Raza	Regular	Online	Approved	Posted	Paid
CPS	00000072	HRS EMP-3964	171444	171444	07/13/2021	EMP-3964-001	HRS0000029	Ms. Halima Raza	Regular	Online	Approved	Posted	Paid

Campus Management System/ ERP has been introduced for office automation



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Aaghi LMS portal for online classes and assignment submission



Spring Tree Plantation Campaign



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Tree Plantation Ceremony at regional Campuses



Template for Evidence(s) UI GreenMetric Questionnaire

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Training on Kitchen Gardening

Description:

1. Department of Agricultural Sciences, Allama Iqbal Open University, Islamabad has already been practicing Environment-Friendly technologies in raising orchards, crop production, Flower nursery raising, and vegetable production. Moreover, zero tillage technologies are being carried out to stop CO₂ emission from the soil surface, Mulching techniques are also being adopted for soil and water conservation.
2. "Plant a Tree Program" is conducted twice every year to ensure AIU's contribution in combat against climate change
3. "AIU Olive tree plantation drive" for a clean green Pakistan was conducted at Main Campus in 2019, 2020 and 2021
4. Tree Plantation Ceremonies are conducted in main campus and regional campuses for a green world
5. Spring Tree Plantation Campaign



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6. Training of more than 3000 farmers across the country.
7. Training on "Kitchen Gardening" to local community
8. Allama Iqbal Open University has placed an automation program. The main aim of this program is to introduce a paperless system in the University. For this Campus Management System/ ERP has been introduced
9. Use of paper is extensively reduced by providing soft books to the students instead of hard copies
10. AIU follows government initiatives which encourages paperless system to reduce paper in daily workplace.
11. AIU follows government initiatives which instructs not to use plastic bags and encourages the use of sustainable and recyclable cloth bags or paper bags
12. Learning Management System is introduced for online and distant learning.
13. Smart working is introduced at university.

http://oric.aiou.edu.pk/?page_id=2319