



GREEN CAMPUS
UNIVERSITAS ESA UNGGUL

LAPORAN GREENMETRIC 2021



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- 1. Setting and Infrastructure**
- 2. Energy**
- 3. Waste**
- 4. Water**
- 5. Transportation**
- 6. Education and Research**

1

Setting and Infrastructure

Number of campus site



**Esa Unggul
University –
Kebon Jeruk
– West
Jakarta
Indonesia**



Description:

Esa Unggul University (UEU) was founded in 1993 under the auspices of The Kemala Bangsa Education Foundation, a leading private university and one of the best private universities in Indonesia with a VISION, which is to become a world-class institution based on intellectuality, creativity and entrepreneurship.

UEU's location is in a strategic area in the area of higher education in the West Jakarta area. Set in extensive greenery and around a lake, University is the focus of life for students, staff and visitors. Comitted for green campus program to support International declaration for better environment our facility conduct high standart and ergonomial for use, we have convering area of 4,5ha, with 40 percent is green coverage.

Esa Unggul continues develop as an “Urban Green Campus” of the community



**Esa
Unggul
University
– Bekasi -
West
Java-
Indonesia**

UEU Bekasi is located in a strategic area in Bekasi - West Java. The university is the focus of life for students, staff and visitors. Equipped with a green campus program to support the international declaration for a better environment, our facilities are high standard, smart building and ergonomic to use, we have a conversion area of 3 ha, with 60 percent being green coverage.

Esa Unggul continues to develop into an “Urban Green Campus” community.





**Esa
Unggul
University
–
Tangerang
- West
Java-
Indonesia**

Description:

UEU Tangerang is the 3rd campus which has just been completed and is located in a strategic area in Tangerang - Banten. This building also uses a smart building system. The University is the focus of life for students, staff and visitors. Equipped with a green campus program to support the international declaration for a better environment, our facilities are of high standard, the buildings are smart and ergonomic to use, we have a conversion area of 1.5 ha, with 60 percent green coverage and will continue to develop into a community "Campus Urban Green".



Campus Setting

ESA UNGGUL – JAKARTA



Campus Setting – Rural (Universitsa Esa Unggul, Indonesia)

Description:

Esa Unggul is located in a urban area with 60 percent of forest cover.

Esa Unggul is located in the west part of DKI Jakarta. The address of esa unggul is Jl.Arjuna Utara No.9 this mean high population density of 17.413 in population per km²

Additional evidence link:

https://id.wikipedia.org/wiki/Duri_Kepa,_Kebon_Jeruk,_Jakarta_Barat

ESA UNGGUL – BEKASI



Description:

ESA Unggul Bekasi is located in a residential city area with an open space area of 70 percent. The campus is still in the final stages of tidying up, which uses smart building systems and also the development of greening open areas. Esa Unggul is located in Bekasi - West Java. The address of esa unggul is Jl. Harapan Indah Boulevard No.2, Pusaka Rakyat, Kec. Tarumajaya, Bekasi, West Java 17214 this means a high population density of 650 in population per km².

Additional evidence link:

https://id.wikipedia.org/wiki/Pusaka_akyat,_Tarumajaya,_Bekasi

ESA UNGGUL - TANGERANG





Description:

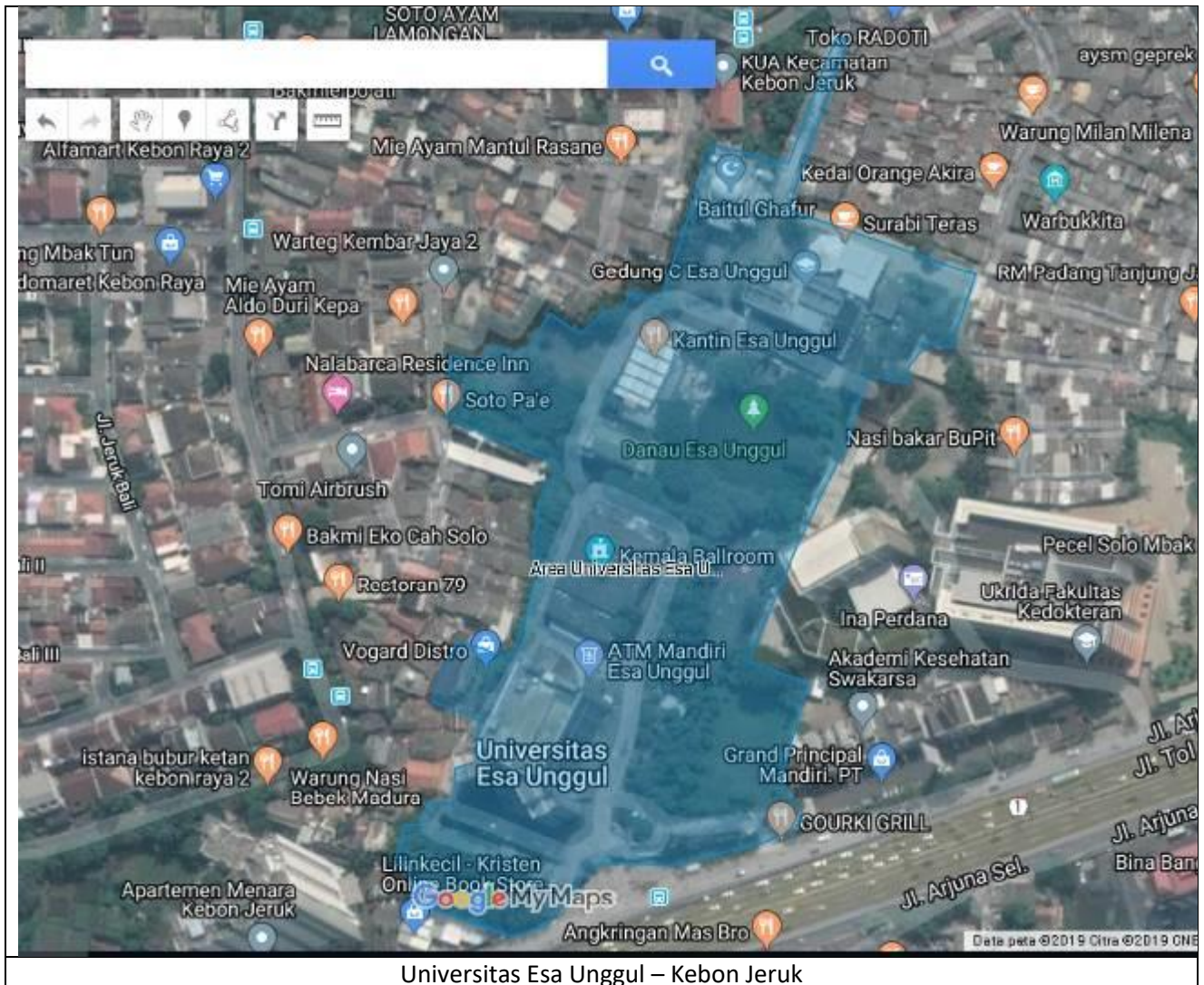
Esa Unggul Tangerang is located in a residential area with an area of 75 percent open space. This campus is still in the final stages of revamping, which uses a smart building system.

Esa Unggul is located in Tangerang - West Java. Esa Superior's address is Jl. Citra Raya Boulevard Ciakar, Kec. Panongan, Tangerang, Banten 15710. With an area of 7.6 km² Ciakar village, the population density is 162 people per km², which means the population in the area is still low.

Additional evidence link:

https://id.wikipedia.org/wiki/Ciakar,_Panongan,_Tangerang

Total Campus Area (meter²)



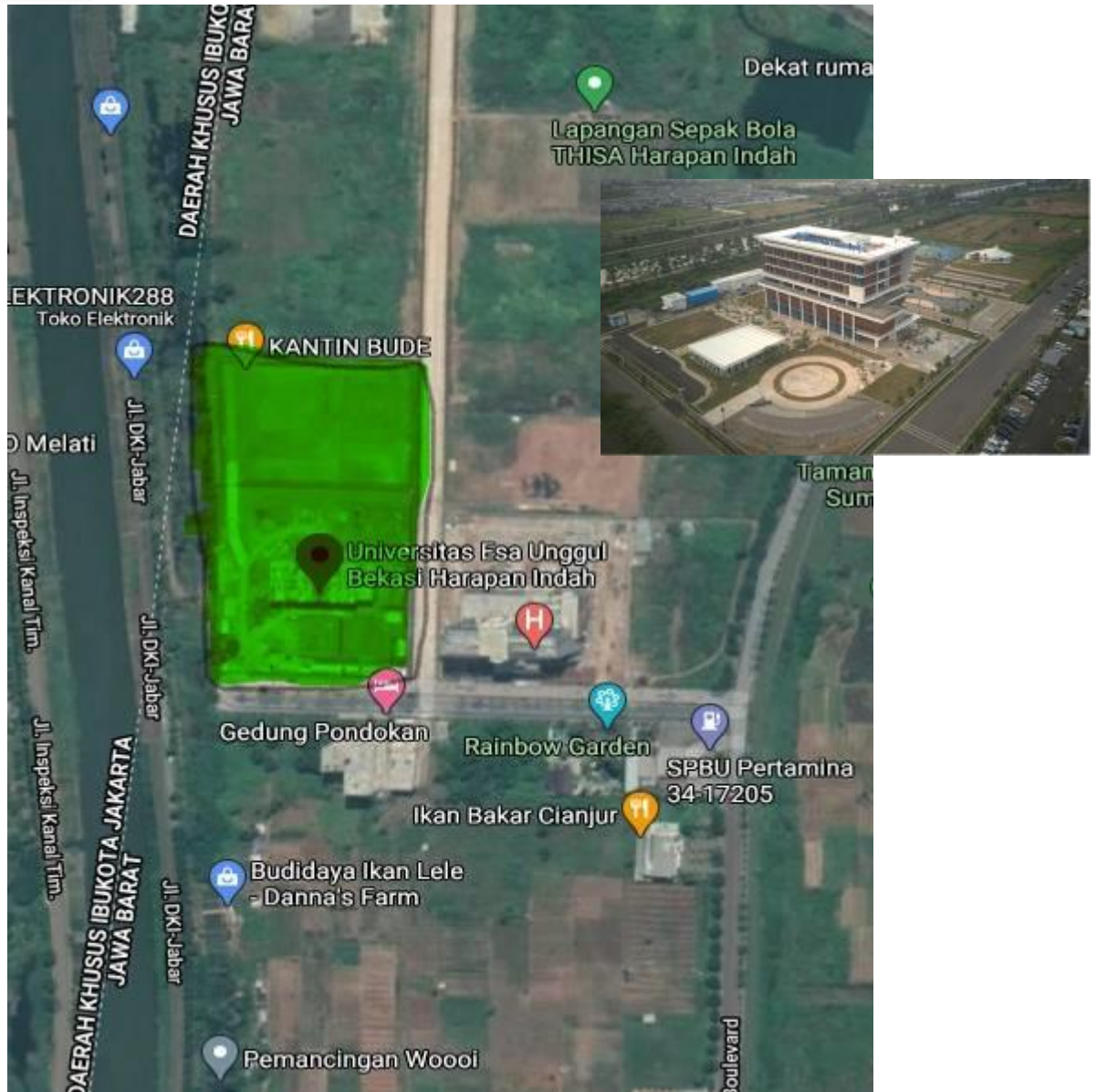
Description:

Total area: 40497m²

Total distance/circumference: 1,2 km

Additional evidence link:

<https://www.google.com/maps/place/Universitas+Esa+Unggul/@-6.1850598,106.7788035,18z/data=!4m5!3m4!1s0x2e69f6f9d35766d1:0x9ac2dec76f747b31!8m2!3d-6.1858081!4d106.7788659>



UNIVERSITAS ESA UNGGUL – BEKASI, WEST JAVA

Description:

Total area: 30.000m²

Total distance/circumference: 1 km

Additional evidence link:

<https://www.google.co.id/maps/place/Universitas+Esa+Unggul+Bekasi+Harapan+Indah/@-6.1590165,106.9701401,932m/data=!3m2!1e3!4b1!4m5!3m4!1s0x2e698b4f86ba93ef:0xcf58e590de21713a!8m2!3d-6.1590165!4d106.9723288?hl=id>



UNIVERSITAS ESA UNGGUL – TANGERANG, WEST JAVA

Description:

Total area: 15.620m²

Total distance/circumference: 0,9 km

Additional evidence link:

<https://www.google.com/maps/place/6%C2%B016'23.5%22S+106%C2%B031'35.0%22E/@-6.2731863,106.5252907,468m/data=!3m2!1e3!4b1!4m13!1m6!3m5!1s0x2e420768746c45fb:0x192fcb02ae7a563f!2sUniversitas+Esa+Unggul+Citra+Raya+Kampus+A!8m2!3d-6.249833!4d106.5224099!3m5!1s0x0:0x0!7e2!8m2!3d-6.273189!4d106.5263849>

Total Campus Building Area

Kampus Kebon Jeruk - Jakarta



Description:

The total area of the campus building in Esa Unggul Kebon Jeruk - Jakarta is 19,603 m²

Esa Unggul University (UEU) was established in 1993 under the auspices of the Kemala Education Foundation educating the nation is a leading Private University and becomes one of the best Private Universities in Indonesia that has VISI, namely being a world-class college based on intellect, creativity and entrepreneurship that excels in the quality of management (process) and results (output) of Tri Dharma Higher Education activities. And have a MISSION: Organizing quality and relevant education, Creating a conducive academic atmosphere, Creating leaders of character and high competitiveness. In the last decade, UEU has experienced a very rapid development, becoming one of the leading Private Universities (PTS) in Jakarta.

Kampus Harapan Indah - Bekasi



Description:

The total building area of the Esa Unggul Bekasi - West Java campus is 11,000m²



Description:

The total building area of the Esa Unggul Tangerang - West Java campus is 15,363m²

Building name	Total Area
Building Campus Jakarta	19603 m ²
Building Campus Tangerang	15363 m ²
Building Campus Bekasi	11000 m ²
Total	45966 m²

Additional evidence link: <https://www.esaunggul.ac.id/>

The ratio of open space to total area



Description:

Esa Unggul Kebon Jeruk Campus has an open area of 25,297.4 m² or 994.9 m

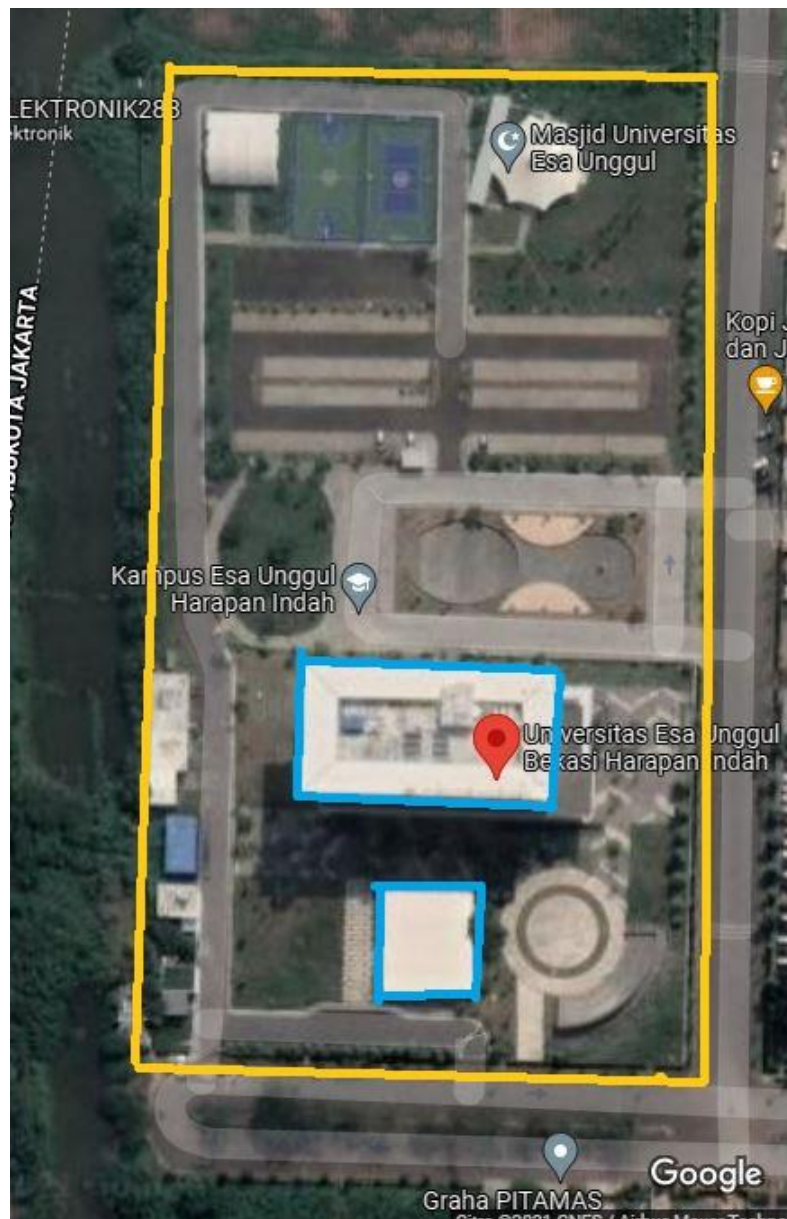
Additional evidence link:

<https://earth.google.com/web/search/Esa+Unggul+University,+Jalan+Arjuna+Utara,+RT.1%2fRW.2,+Duri+Kepa,+Kota+Jakarta+Barat,+Daerah+Khusus+Ibukota+Jakarta/@-6.18512587,106.77920522,4.06489243a,479.59584596d,35y,0.00000001h,44.99637532t,-0r/data=Ct8BGrQBEq0BCiUweDJINjlmNmZhN2FkMmU1Mzk6MHhmNDYzMWVjYWEzZjU2NDE2GRSzugVXvhjAIdJeM6ZsVpAKnJFc2EgVW5nZ3VslFVuaXZlcnNpdHksIEphbGFuIEFyanVuYSBVdGFyYSwgUIQuMS9SVy4yLCBEeXJpIEtIcGEslEtdGEgSmFrYXJ0YSBCYXJhdCwgRGFlcmFolEtodXN1cyBJYnVrb3RhIEpha2FydGEYAiABliYKJAKD-yX-KuVAQBEiJlxYtyUMwBm0p4BLvrFVQCH2KD0ee49BwA>



Esa Unggul Citra Raya Tangerang Campus has an open area of 14,170 m²
Esa Unggul - Tangerang

ESA UNGGUL - BEKASI



Esa Unggul Harapan Indah Bekasi Campus has an open area of 18,250 m²

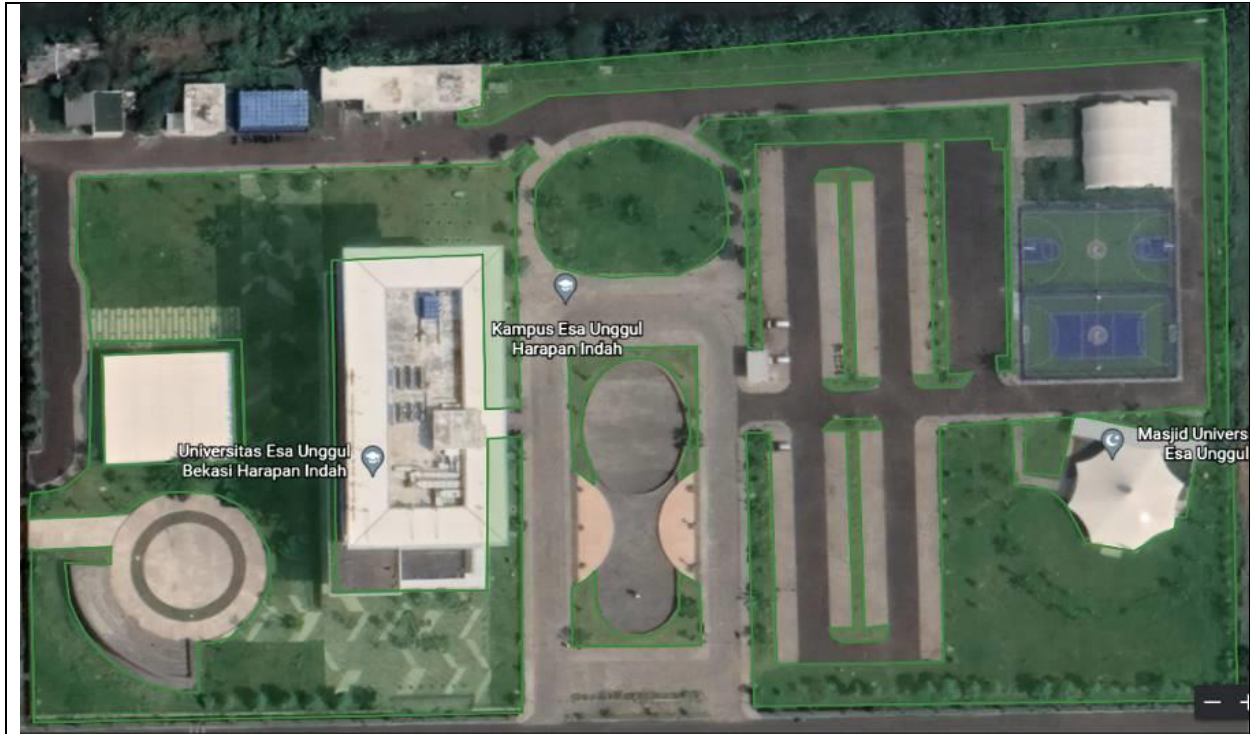
Total Area on Campus Covered in Forest Vegetation (meter²)



Area Hijau (Universitas Esa Unggul, Indonesia)



Esa Unggul – Tangerang (open space 75%)



**Esa Unggul – Bekasi
Open Space 70%**

Description:

Our campus is located in the middle of an urban settlement in West Jakarta with a land area of 40,497 m², there are still 25,297 m² of urban forest. At Citra Raya and Harapan Indah campus we are in the process of developing a green campus, because the campus has just been completed. For Tangerang and Bekasi campuses have 70- 75 percent of the land open for future development and are already in the process of implementing landscapes that can make students comfortable in the learning process.

Univ. Esa Unggul	Total Area	Total distance	Covered in forest Vegetation
Campus Kebon Jeruk - Jakarta	40,497m ²	1.2km	25,297m ²
Campus Citra Raya – Tangerang	15,620m ²	0.9km	12,874m ²
Campus HI - Bekasi	30,000m ²	1km	21,445m ²

Total area on campus covered in planted vegetation



KEBON JERUK - JAKARTA

Description:

Esa Unggul Kebon Jeruk Campus has an open area embedded with plants and large trees covering an area of 15,177.77m²



HARAPAN INDAH - BEKASI

Description:

Esa Unggul Harapan Indah Bekasi campus is currently only running 8 months of completion of the construction of a new building in an area of 30,000m². The land that is in the stage of plant development area of 11,2300m², including the land on the right and left side of the building.

Additional evidence link:

<https://earth.google.com/web/search/Esa+Unggul+Harapan+Indah+Boulevard+No.+2,+Pusaka+Rakyat,+Kec.+Tarumajaya,+Bekasi,+Jawa+Barat+17214/@-6.15834517,106.97186823,3.74579278a,288.83138602d,35y,143.89599836h,44.99516198t,0r/data=Cs8BGqQBEp0BCiUweDJINjk4YjRmODZiYTkzZWY6MHhjZjU4ZTU5MGRIMjE3MTNhGUUp1pnXAohjAITRw9r08vlpAKmJFc2EgVW5nZ3VsiEhhcmFwYW4gSW5kYWggQm91bGV2YXJkIE5vLiAyLCBQdXNh2EgUmFreWF0LCBLZWMuIFRhcVtYWpheWESiEJla2FzaSwgSmF3YSBCYXJhdCAXNzlxNBgCIAEiJgokCW6KxBnwuRjAEe4hOBkfvhjAGYY24T6GvlpAlbSgmAc6vlpAMicKJQojCiExSTBhaV9YY3B1LUhYWG1icmN5cWJCM28zOFQ0SW5UaXU>

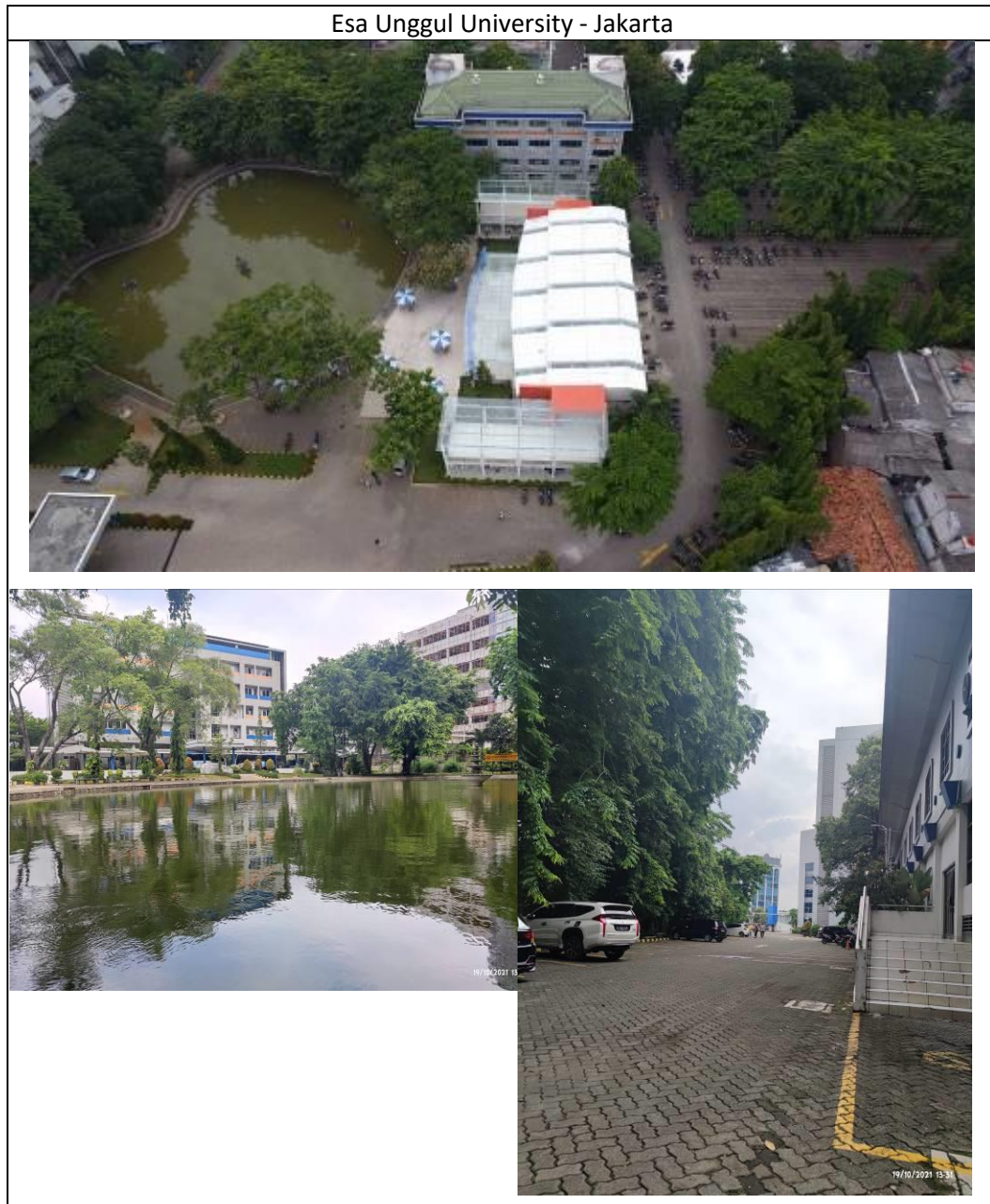


CITRA RAYA - TANGERANG

Description:

Esa Unggul Citra Raya Tangerang Campus has just completed the construction of a new building on an area of 15,000m². Land that is in the stage of plant development area of 9,890m², including the land on the right and left side of the building.

Total area on campus for water absorption besides forest and planted vegetation





ESA UNGGUL - BEKASI



ESA UNGGUL - TANGERANG

Description:

Esa Unggul Campus in addition to forests and vegetation areas planted in open areas, we also use conbloc in every parking area or pedestrian area. In areas such as soil, we also install biopori to absorb rainwater. In two campuses we have infiltration and rainwater storage in the form of artificial lakes and ponds with fish as a marker of the quality of the water.

Total water absorption area: 24.639,39m²

Total Area : 86.117 m²

Percentage area: 28,61%

Additional evidence link: www.esaunggul.ac.id






University budget for sustainability effort (in US Dollars)

	2018	2019	2020	Average
Budget Total	\$11juta	\$14,3juta	\$15juta	\$13,4juta
Sustainability Budget	\$4,8juta	\$7,1juta	\$7,5juta	\$6,4juta
			Percentage	47%

Description:

- The average percentage university budget for our university is 47%

Percentage of operation and maintenance activities during Covid-19 pandemic

	
<p style="text-align: center;">Building wall cleaning</p>	<p style="text-align: center;">Room disinfectant</p>
<p style="text-align: center;">operation and maintenance activities during Covid-19 pandemic</p>	

Description:

Related to activities during the pandemic covid esa superior university still performs the maintenance of buildings or infrastructure facilities that there must be regular maintenance even though there are no lecture activities.especially the maintenance of generators, elevators, cleanliness of building walls, provision of hand washing facilities at each entrance of the building and disinfection periodically in every room used by some educators.

1	Total campus buildings area	43.741 m ²
2	Total operated building	9800 m ²
	Percentage building that operated and maintained	22,40%

Campus facilities for disable, special needs and or maternity care

	
<p>1. Disabled special line</p>	<p>2. Accessible toilet</p>
	
<p>3. special parking spaces for the disabled</p>	

Description:

Our campus is equipped with facilities for students who lack, including special parking lanes, special lanes to enter the campus building, toilets. Lactation room is a private room for breastfeeding staff can pump breast milk privately, we provide adjacent to Esa Medika clinic room.

<http://greencampus.esaunggul.ac.id>

Security and safety facilities

	
<p>4. CCTV indoor & outdoor</p>	<p>5. Emergency training</p>
	



Description:

For security facilities used by the campus today is CCTV and smart building monitoring to see wasteful electricity usage. Periodically make changes to the refill of light fire extinguishers and conduct K3 training, which is followed by the entire academic community. As well as the screening of safety introduction videos at every time there are activities in the meeting room or hall.

Additional evidence link (i.e., for videos, more images, or other files that are not included in this file):

- <http://uigreen.metric.esaunggul.ac.id>

Health infrastructure facilities for students, academics and administrative staffs' wellbeing

	
<p>6. physiotherapy</p>	<p>7. Clinic Esa Medika</p>

Description:

On our campus there are facilities for the health of students as well as employees and lecturers. In addition, the campus has a physiotherapy clinic that can be used by students, employees and lecturers. This clinic can also accept patients who come from outside the campus.

Conservation: plant, animal, and wildlife, genetic resources for food and agriculture secured in either medium or long-term conservation facilities



Description:

- Animal cage for student research materials, animals reared are white rats and guinea pigs
- Danau Esa Unggul for fish conservation area

Additional evidence link : <http://uigreen.metric.esaunggul.ac.id>









2

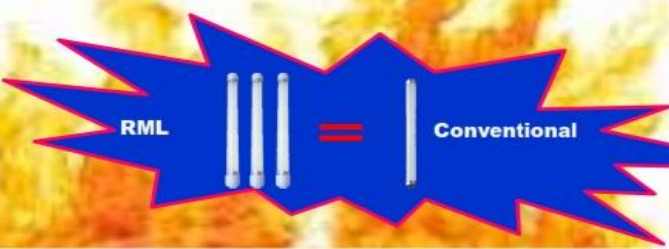
Energy

Energy Efficient Appliances Usage

RML VERSUS CONVENTIONAL LIGHT

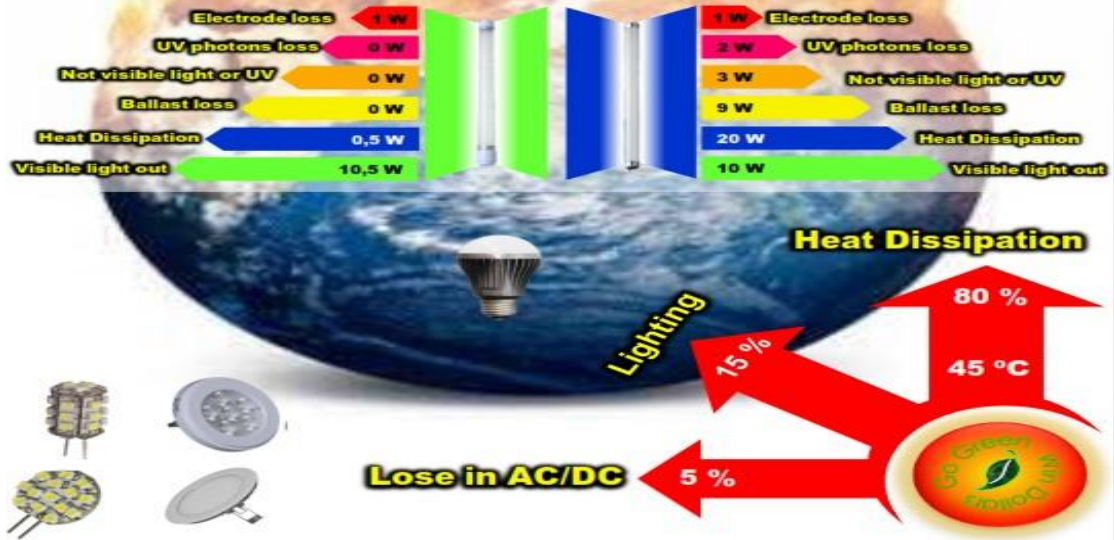
Power Consumption	Brightness Level	Lifetime
 =  20W 4 X 5W	  Energy Saver RML	 + ... =  40 = 1

Did you know that the TL36 consume 45 Watt? **Did you know That the TL18 consume 27 Watt?**



RML **=** **Conventional**

Resistor Multi Lighting Power Consumption 12 Watt	Conventional Power Consumption 45 Watt																								
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="background-color: #FF0000; color: white;">Electrode loss</td><td style="text-align: right;">1 W</td></tr> <tr><td style="background-color: #FF0000; color: white;">UV photons loss</td><td style="text-align: right;">0 W</td></tr> <tr><td style="background-color: #FF0000; color: white;">Not visible light or UV</td><td style="text-align: right;">0 W</td></tr> <tr><td style="background-color: #FF0000; color: white;">Ballast loss</td><td style="text-align: right;">0 W</td></tr> <tr><td style="background-color: #FF0000; color: white;">Heat Dissipation</td><td style="text-align: right;">0,5 W</td></tr> <tr><td style="background-color: #00FF00; color: white;">Visible light out</td><td style="text-align: right;">10,5 W</td></tr> </table>	Electrode loss	1 W	UV photons loss	0 W	Not visible light or UV	0 W	Ballast loss	0 W	Heat Dissipation	0,5 W	Visible light out	10,5 W	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="background-color: #FF0000; color: white;">Electrode loss</td><td style="text-align: right;">1 W</td></tr> <tr><td style="background-color: #FF0000; color: white;">UV photons loss</td><td style="text-align: right;">2 W</td></tr> <tr><td style="background-color: #FF0000; color: white;">Not visible light or UV</td><td style="text-align: right;">3 W</td></tr> <tr><td style="background-color: #FF0000; color: white;">Ballast loss</td><td style="text-align: right;">9 W</td></tr> <tr><td style="background-color: #FF0000; color: white;">Heat Dissipation</td><td style="text-align: right;">20 W</td></tr> <tr><td style="background-color: #00FF00; color: white;">Visible light out</td><td style="text-align: right;">10 W</td></tr> </table>	Electrode loss	1 W	UV photons loss	2 W	Not visible light or UV	3 W	Ballast loss	9 W	Heat Dissipation	20 W	Visible light out	10 W
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Heat Dissipation	20 W																								
Visible light out	10 W																								



Heat Dissipation

80% ↑

45 °C

15%

5%

Lighting

Lose in AC/DC

Energy Saving Lamp with RML Lamp



Conventional lamp Test



LED RML lamp Test

Savings Calculation Table Of Lamp

Universitas Esa Unggul

Jl. Arjuna Utara No. 9 RT 1/RW 2 Duri Kepa, Kb. Jeruk - Jakarta Barat

No.	Type	Jumlah Bola Lampu	LAMPU KONVENSIONAL									LAMPU RML									
			Daya Bola Lampu	Lampu	Ballast	Jumlah daya	Jumlah Daya	LWBP		WBP		Daya Bola Lampu RML	Jumlah Daya RML	LWBP		WBP					
			watt	Set	watt	watt	Kw	Jam	Kw	Jam	Kw	watt	Kw	Jam	Kw	Jam	Kw				
1	TL 36 / T8	3601	36	1	11,7	47,7	171,77	10	1.718	4	687,1	12	43,21	10	432,12	4	172,85				
2	Bulb	25	0	1	0	0	-	10	-	4	-	0	0,00	10	0,00	4	0,00				
3	Down Light / ROUND PANEL	561	18	2	0	36	20,20	10	202	4	80,8	5	2,81	10	28,05	4	11,22				
4	PJU	11	250	1	45	295	3,25	10	32	4	13,0	45	0,50	10	4,95	4	1,98				
5	Lampu Sorot	1	0	1	45	45	0,05	10	0	4	0,2	0	0,00	10	0,00	4	0,00				
Jumlah		4.199	Total Konsumsi Listrik Lampu Konvensional (kw)									1.953			781,0	Total Konsumsi Listrik Lampu RML (kw)		465,12			186,05

Konsumsi Listrik untuk Lampu Konvensional setiap Bulan

Biaya Pemakaian per Bulan (LWBP)	TDL	Biaya LWBP	955,50Rp/kwh	48.506.876,69	Rp/Bulan
Beban Puncak (WBP)	TDL	Biaya WBP	1.433,28Rp/kwh	29.104.735	Rp/Bulan
Pajak 3 % (PPN , Pph, Pajak Penerangan)	Rp	2.328.348		-	Rp/Bulan
Perkiraan Biaya Maintenance 0,5 %				419.900	Rp/Bulan
Total Biaya Pemakaian per Bulan				78.031.512	Rp/Bulan

Konsumsi Listrik untuk Lampu RML setiap Bulan

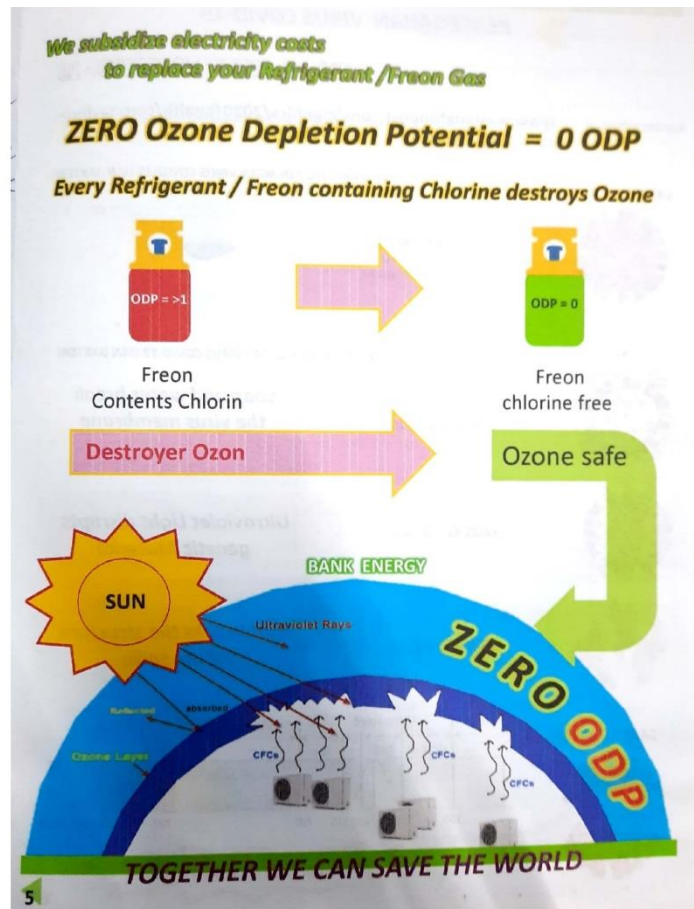
Biaya Pemakaian per Bulan (LWBP)	TDL	Biaya LWBP	955,50Rp/kwh	11.554.976	Rp/Bulan
Beban Puncak (WBP)	TDL	Biaya WBP	1.433,28Rp/kwh	6.933.131	Rp/Bulan
Pajak 3 % (PPN , Pph, Pajak Penerangan)	Rp	554.643		0	Rp/Bulan
Total Biaya Pemakaian per Bulan				18.488.107	Rp/Bulan

Perhitungan Penghematan Biaya Listrik

Penghematan Listrik dari pemakaian Lampu 59.543.405 Rp/Bula

Energy efficient with RML Lamp can reduce 75% of KWH usage. LED Lighting continues application for each room and facility with light detection.

Freon is used for air conditioning on campus



Use zero ozone Deletion potential

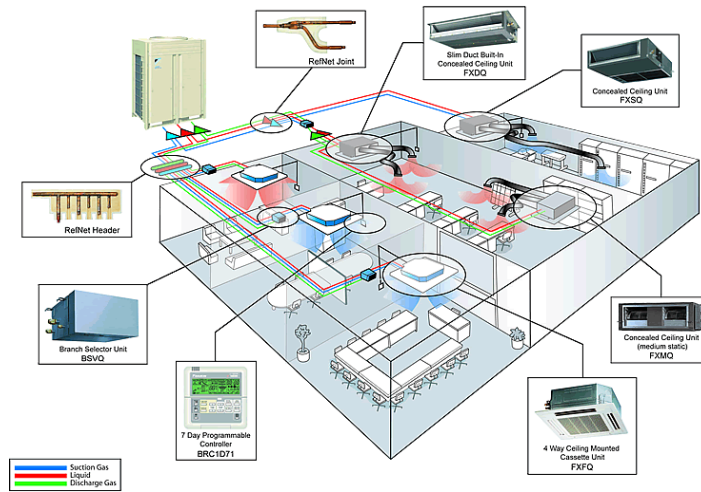
Esa Unggul University has used air conditioning technology that is environmentally friendly and electricity efficient, namely using Air Conditioner Variable Refrigerant Volume (VRV), AC VRV uses inverter technology on Variable Refrigerant Volume (VRV) type air conditioners commonly used in multi-storey buildings. VRV is an AC capacity-setting technology that has the ability to prevent excessive cooling, thus saving electricity.

VRV III is designed for large rooms in multi-storey buildings, with several features including:

1. Has a large capacity for large rooms anyway, where:

- Outdoor units with capacities up to 54 PK / Two types of combination outdoor units
- Range of indoor units / connected up to 64 indoor units
- Length pipe length / Difference level
- Height of external static pressure

2. Installation and maintenance of ac is quite easy.



Smart Building Implementation

*Min. at least five requirements for each building

No.	Name	Place	automation		safety				energy		water		Indoor environment				lighting				Building Area (m ²)	
			B1	B2	S1	S2	S3	S4	E1	E2	A1	A2	I1	I2	I3	I4	L1	L2	L3	L4		
	Universitas Esa Unggul Building A	Jakarta, Indonesia	x		x				x		x							x				13600
	Universitas Esa Unggul Building B	Jakarta, Indonesia	x		x				x									x				1548
	Universitas Esa Unggul Building C	Jakarta, Indonesia	x		x				x		x				x		x					4455
	Universitas Esa Unggul Building A	Tangerang, Indonesia	x		x				x		x			x			x					15.363
	Universitas Esa Unggul Building A	Bekasi, Indonesia		x			x		x		x		x		x		x		x			11.000
Total																						

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

Smart building implementation

$$\frac{\text{total smart building area}}{\text{total building area}} \times 100\%$$

$$\frac{44.418}{46.239} \times 100\% = 96\%$$

Note:

Additional evidence link: www.esaunggul.ac.id

Universitas Esa Unggul – Kebon Jeruk – Jakarta

Building A	Building B
	
Building C	



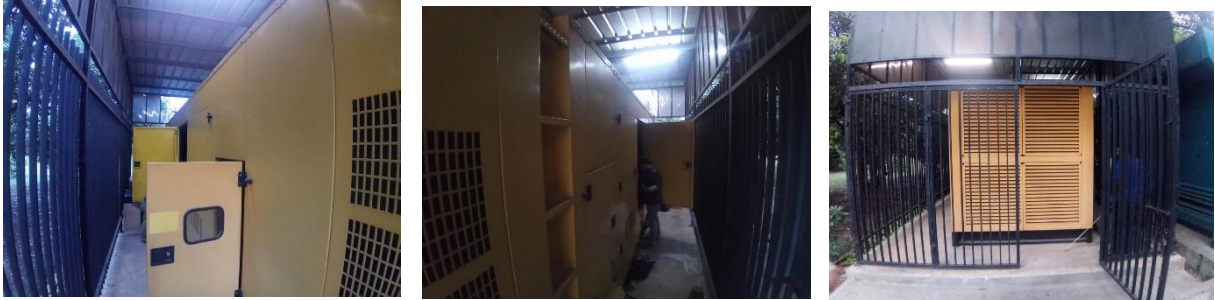
Universitas Esa Unggul – Cikupa - Tangerang

Building A	Building A
	

Universitas Esa Unggul - Bekasi

Building A	Building B
	

Renewable Energy Sources in Campus



Biodiesel Generator and Power Integration Unit (Esa Unggul University - Jakarta)
 Esa Unggul University – Kebon Jeruk, Jakarta already has a renewable energy source namely BIO DIESEL with building capacity A 1000Kwh and Building C 720Kwh

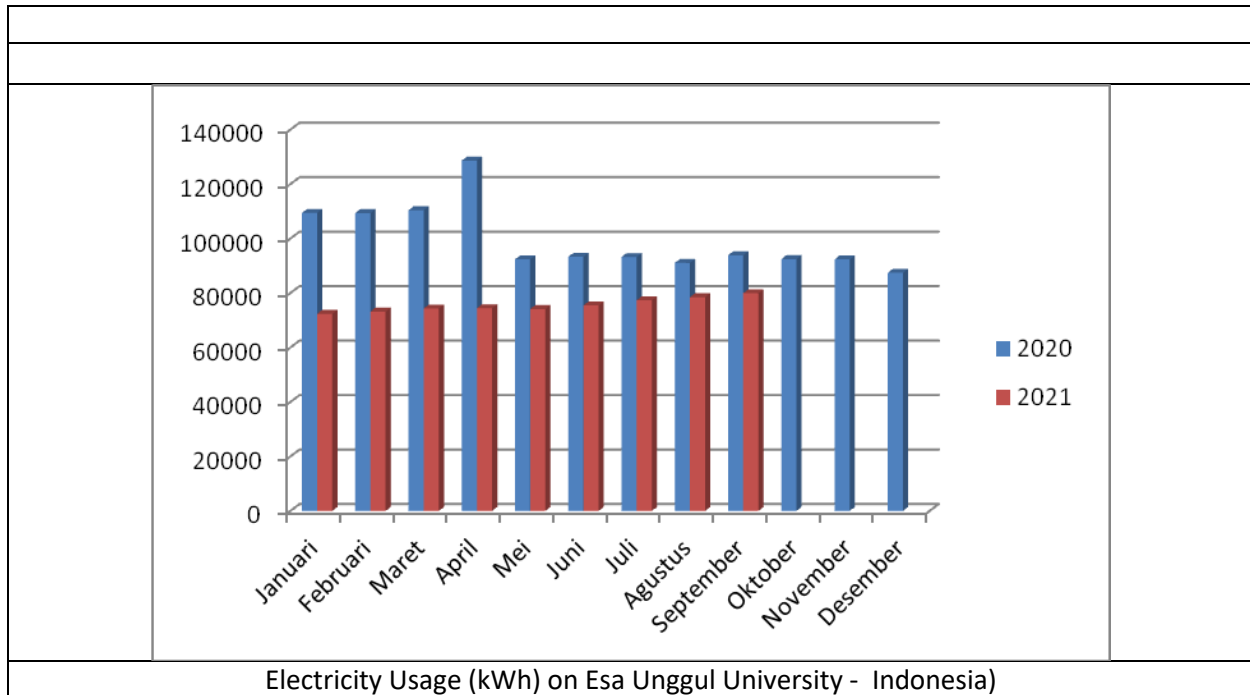


Biodiesel Generator and Power Integration Unit (Esa Unggul University - Bekasi)
 Esa Unggul University – Bekasi already has a renewable energy source, namely BIO DIESEL with a capacity of 520Kwh that reaches the entire building area as well as the main street lights.



Biodiesel Generator and Power Integration Unit (Esa Unggul University – Cikupa - Tangerang)
 Esa Unggul University – Cikupa- Tangerang already has a renewable energy source, namely BIO DIESEL with a capacity of 640Kwh that reaches the entire building area as well as the main street lights.

Electricity Usage per Year (in Kilowatt hour)



Description:

Rata - rata penggunaan listrik untuk Kampus Universitas Esa Unggul Kebon jeruk - Jakarta pada tahun 2019 adalah 136.294 kWh.

pada tahun 2020 mengalami penurunan penggunaan energy listrik dikarenakan Pandemi Covid 19 membuat aktifitas dikampus ditiadakan, pada tahun 2020 rata – rata penggunaan listrik 70.015Kwh.

pada tahun 2021 mengalami sedikit kenaikan pemakaian listrik dikarenakan beberapa aktivitas dikampus diadakan secara terbatas dengan mematuhi protokol kesehatan, penggunaan listrik pada tahun 2021 s/d berjalan rata – rata 75.331kwh.

ratio of renewable energy production divided by total energy usage per year



Biodiesel Combined Cooling Heating and Power Integration Unit (Universitas Esa Unggul – Jakarta, Bekasi, Tangerang)

Description:

(Please describe the renewable energy sources on your campus. The following is an example of the description. You can describe more related items if needed.)

No	Renewable Energy	Production (in kWh)
1	Biodiesel	2880

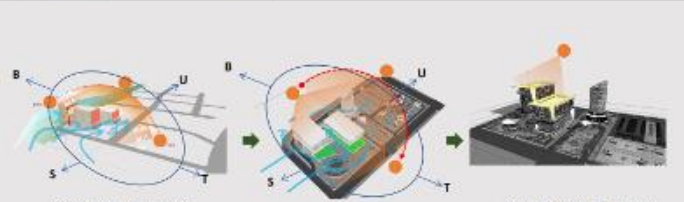
$2880 / 75331$ (Electricity usage) = 26.5 %

Additional evidence link (i.e., for videos, more images, or other files that are not included in this file):

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

Universitas Esa Unggul
Green Campus

Concept.
Energy Efficiency & Renewable Energy



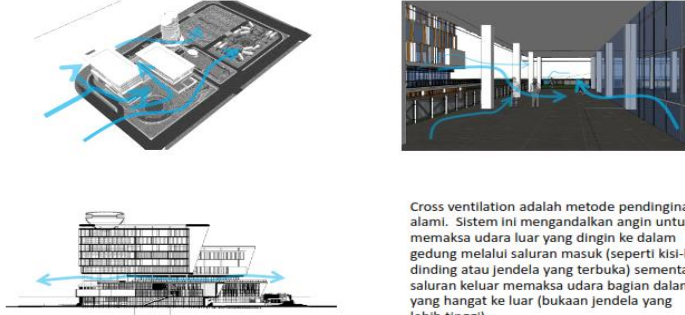
Massa bangunan memiliki bentuk persegi panjang yang bidang terkecil menghadap ke arah datangnya cahaya matahari guna meminimalisir radiasi matahari yang masuk

Menambahkan green awnings pada lantai dua setiap bangunan untuk menjaga suhu ruangan Gedung.

Menambahkan shading dan overlapping atap untuk menghalau cahaya matahari yang masuk.

Universitas Esa Unggul
Green Campus

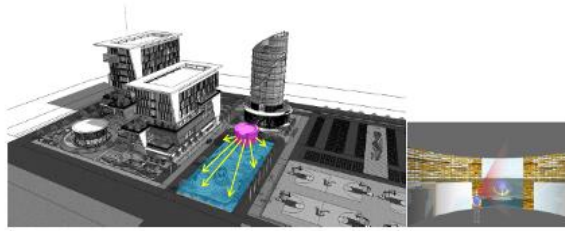
Concept.
Indoor Air Quality



Cross ventilation adalah metode pendinginan alami. Sistem ini mengandalkan angin untuk memaksa udara luar yang dingin ke dalam gedung melalui saluran masuk (seperti kisi-kisi dinding atau jendela yang terbuka) sementara saluran keluar memaksa udara bagian dalam yang hangat ke luar (bukan jendela yang lebih tinggi).

Cross ventilation adalah metode pendinginan alami. Sistem ini mengandalkan angin untuk memaksa udara luar yang dingin ke dalam gedung melalui saluran masuk (seperti kisi-kisi dinding atau jendela yang terbuka) sementara saluran keluar memaksa udara bagian dalam yang hangat ke luar (bukan jendela yang lebih tinggi).

Concept.
Water Efficiency as green development



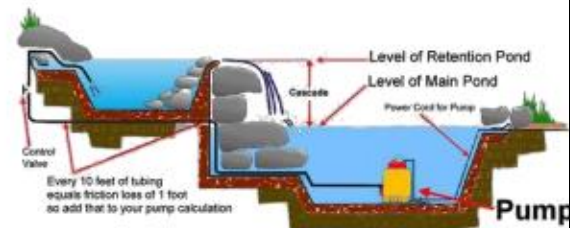
Retention Pond selain berfungsi sebagai penampung air hujan, kolam ini juga sebagai pengatur thermal area site. Pada ujung kolam terdapat ruang rapat dengan tujuan meningkatkan kesan rileks dan fresh pada pengguna.

Point of view dari ruang rapat.

Concept.
Water Efficiency as green development



Retention Pond adalah kolam yang dirancang dengan kapasitas penyimpanan tambahan untuk meredam limpasan selama hujan dan untuk penyimpanan air hujan sebagai cadangan air. Selain membantu untuk mengurangi kenaikan suhu udara mikro di sekitar bangunan.





Universitas Esa Unggul - Bekasi



Universitas Esa Unggul - Bekasi



Description:

(Please describe the elements of green building implementation on your campus. The following is an example of the description. You can describe more related items if needed.)

1. Esa Unggul University has implemented Green Bulding where the university building is designed with the concept of solar lighting but still comfortable while in the building, with the concept of 75% of the building highlighted by the morning and evening sun, this concept can save the use of electricity for lighting.
2. In addition to superior esa university lighting also utilizes rainwater channeled through the rooftop media of the building channeled to the source of water catchment and reused to water plants and grass around the campus area
3. Esa Unggul also has a Biotank sewage treatment plant (STP) system to overcome domestic waste processed domestic waste that has been tested safely if exposed to skin is used to water plants.Esa unggul has a rainfle pond that can hold rainwater up to 456000s of water, rainwater is accommodated in a rain pond and filtered to use artificial biovortex so that rainwater becomes cleaner and safer for fish and aquatic plants.

Additional evidence link (i.e., for videos, more images, or other files that are not included in this file):

Greenhouse gas emission reduction program

	
<p>1. Green house (Universitas Esa Unggul)</p>	<p>2.</p>
	
<p>3. Fruit seedlings and planting of medicinal plants</p>	

Description:

With the greenhouse and plant planting on campus can absorb carbon dioxide (CO₂) levels, increase oxygen, lower the temperature with shade and coolness of plants, become a water catchment area, and reduce noise.

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

Option 2: Recommended by UI GreenMetric

CO₂ (electricity)

$$\begin{aligned} &= \frac{\text{electricity usage per year (kWh)}}{1000} \times 0,84 \\ &= \frac{1,633,286 \text{ kWh}}{1000} \times 0,84 \\ &= 1,371.96 \text{ metric tons} \end{aligned}$$

CO₂ (bus)

$$\begin{aligned} &= \frac{\text{number of shuttle bus in your university} \times \text{total trips for shuttle bus service each day} \times \text{approximate travel distance of vehicle each day inside campus only (KM)} \times 240}{100} \times 0,01 \\ &= \frac{15 \times 150 \times 5 \times 240}{100} \times 0,01 \\ &= 270 \text{ metric tons} \end{aligned}$$

CO₂ (cars)

$$\begin{aligned} &= \frac{\text{number of cars entering your university} \times 2 \times \text{approximate travel distance of vehicle each day inside campus only (KM)} \times 240}{100} \times 0,02 \\ &= \frac{2,000 \times 2 \times 5 \times 240}{100} \times 0,02 \\ &= 960 \text{ metric tons} \end{aligned}$$

CO₂ (motorcycle)

$$\begin{aligned} &= \frac{\text{number of motorcycle entering your university} \times 2 \times \text{approximate travel distance of vehicle each day inside campus only (KM)} \times 240}{100} \times 0,01 \\ &= \frac{4,000 \times 2 \times 5 \times 240}{100} \times 0,01 \\ &= 960 \text{ metric tons} \end{aligned}$$

CO₂ (total)

$$\begin{aligned} &= 1,371.96 + 270 + 960 + 960 \\ &= 3,561.96 \text{ metric tons} \end{aligned}$$

Carbon footprint in 2019 = 3,561.96 metric tons

Number of innovative program(s) during Covid-19 pandemic

Enjoy Smart Air Purifier

- Easy remote control through smart phones.
- Visualization of air quality and automatic operation based on air quality level.
- Propose optimal timing for filter exchange.

Spesifikasi

- » Dimensi 45 x 84 x 161 sentimeter (dengan lampu UVC)
- » Berat 50 kilogram
- » Kapasitas baterai lampu 45 ampere-jam, daya tahan 1 jam
- » Kapasitas baterai mesin 90 ampere-jam, daya tahan 5 jam
- » Penggerak empat roda yang bisa berputar 360 derajat

Target lokasi penggunaan AUMR

- Rumah sakit
- Sekolah
- Perkantoran
- Hotel

Komunikasi data

- » Pengendali AUMR, menggunakan frekuensi gelombang radio dengan jarak operasi hingga 1,5 kilometer
- » Data gambar dan video

Lampu UVC

- » Jumlah 6 unit
- » Tipe tabung 36 watt T8, panjang gelombang ultraviolet 253,7 nanometer untuk disinfektan dan mengandung merkuri (Hg) sebanyak 2 miligram
- » Masa pakai 9.000 jam

Smart room sterilization system using UVC rays

Description:

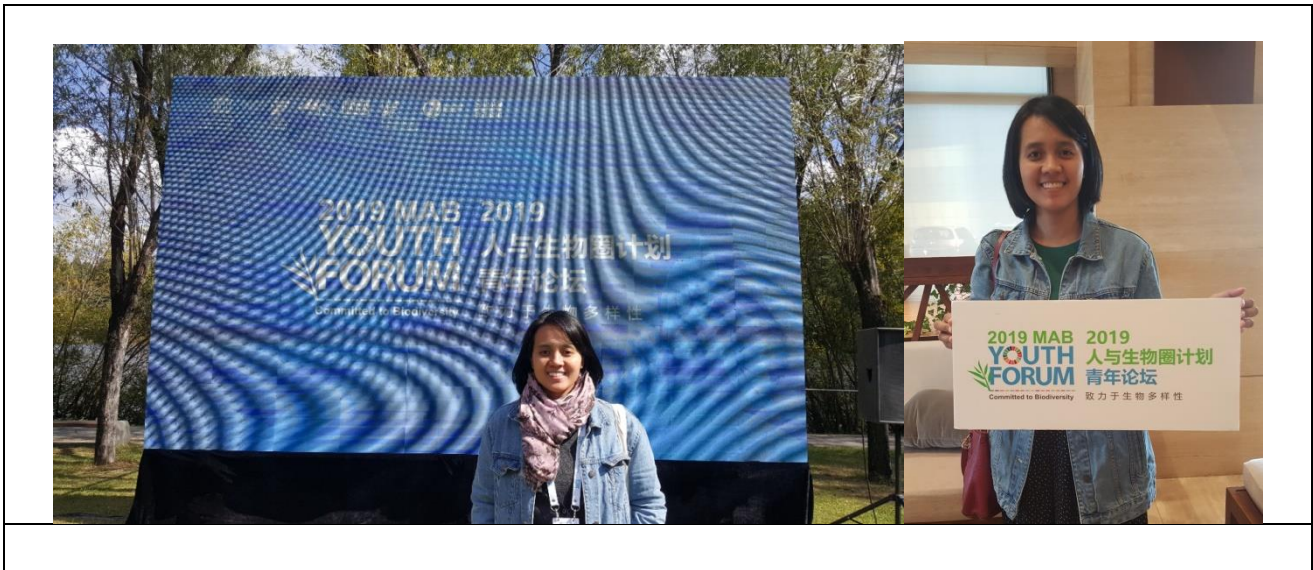
The use of UVC rays and smart air purifiers in every room used in meetings or meetings at small scales, is also used in meeting rooms with a capacity of 50 people. Smart air purifier is to clean the room air from bacteria or viruses that rotate from the air from the air conditioner.

UVC is used to maintain air quality standards despite the dynamics of cooling load and the dynamics of biological pollutants in the room. There are also innovations in room sterilization using UVC rays for biological

pollutants attached to the surfaces such as benches, floors, and walls. Irradiating of rooms is carried out automatically every time the room is about to be used or after an activity and can be automated via condition sensors attached to PC-operated web cams.

The irradiation process is carried out at certain time intervals when the room unoccupied. During the process the door is closed and information is displayed to users outside. UVC wavelengths can be remotely regulated so they can be used for multi-organic sterilization of pollutants (biological pollutants).

Impactful university program(s) on climate change



Description:

UEU Biotechnology Lecturer Radisti Ayu Praptiwi was one of the winners in the 2020 MAB Young Scientists Awards held by the United Nations Educational Scientific and Cultural Organization (UNESCO). Radisti said in the event he was successfully selected through his research that took the theme related to climate change entitled "Understanding the Impact Climate Change to Cultural Ecosystem Services in Tropical Marine Biosphre Reserve Taka Bonerate Kepulauan Selayar". "In the selection process conducted by UNESCO, my research competes with a number of studies conducted by scientists from many countries, the process of research work was carried out for 1 year.

Additional evidence link :

<https://www.esaunggul.ac.id/angkat-tema-perubahan-iklim-karya-dosen-bioteknologi-ueu-tepilih-di-scientists-award-unesco/>



3

Waste

Recycling Program for University Waste



GREEN CAMPUS

UNIVERSITAS ESA UNGGUL

 [BERANDA](#) [TENTANG](#) [PROGRAM](#) [BERITA & KEGIATAN](#) [GALERI](#) [GREENMETRIC UI](#) [Q](#)



Universitas Esa Unggul

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.

- ✓ Satisfaction Value For Nature Solution
- ✓ Comfortable Learning
- ✓ Eco System
- ✓ Recycle



POSTS

- Edukasi >
- Transportasi >
- Air >
- Limbah >
- Energi & Perubahan Iklim >



Description:

Universitas Esa Unggul has a waste management policy based on the Rector's Decree to carry out various programs as a form of implementation in domestic waste recycling to realize an environmentally friendly University. The domestic waste consist of organic, inorganic, and toxic waste. The waste recycling program is carried out by strengthening human resources and campus infrastructure so that it can reduce the amount of waste that is disposed in landfills. The Esa Unggul University programs in an effort to recycle the waste generated in the Esa Unggul University campus environment, namely:

1. Formation of a green campus task force team
Esa Unggul University has a green campus task force team as officers who play a role in monitoring and evaluating the implementation of the rector's instructions in realizing an environmentally friendly campus. The green campus team consists of employees and students that. work together in empowering campus resources to reduce the amount of waste generated from campus life activities.
2. Socialization of waste management
Universitas Esa Unggul conducts active and massive socialization to all elements of the campus community regarding waste management including how to dispose of waste, waste disposal locations, and waste management programs within the Universitas Esa Unggul campus environment. Active socialization activities are carried out by providing direct education to the campus community in ceremonial activities such as new student admissions and environmental day celebrations. Socialization regarding waste management was also carried out massively through various campus social media including Instagram and the website.
3. Training of waste management officers
Esa Unggul University has a training program for officers involved in waste management consisting of janitors, park staff, public employees, and students regarding waste management in the campus. The training program is carried out at least once a year with the aim of increasing the knowledge and skills of human resources at Esa Unggul University in managing waste. The training was held related to the implementation of the latest methods in managing waste generated by the campus community, such as management of compost fertilizer management, ecoenzyme management, plastic waste management, and infectious waste management.
4. Provision of categorical trash bin and temporary shelter
Usa Unggul University provides support for the campus community so that they can implement the behavior of managing waste generated by activities by providing trash cans according to waste categories ranging from general waste disposal sites to temporary waste disposal sites. The provision of trash facilities according to the waste category is part of an effort to shape the behavior of the people of Esa Unggul University so that they are accustomed to managing waste, starting from how to dispose of according to the category of garbage disposal.
5. University waste bank program
Esa Unggul University has a waste bank as an effort to accommodate the disposal of non-organic waste that can be used as artistic value or economic value. The waste bank is managed by employees and students with the aim of managing non-organic waste so that it can be used as optimally as possible to improve the welfare of the Esa Unggul University community.
6. Program for utilizing waste into useful products
7. Esa Unggul University utilizes domestic waste in the form of organic, non-organic, and toxic/B3 waste by recycling it to produce products that are efficient and has economic value.

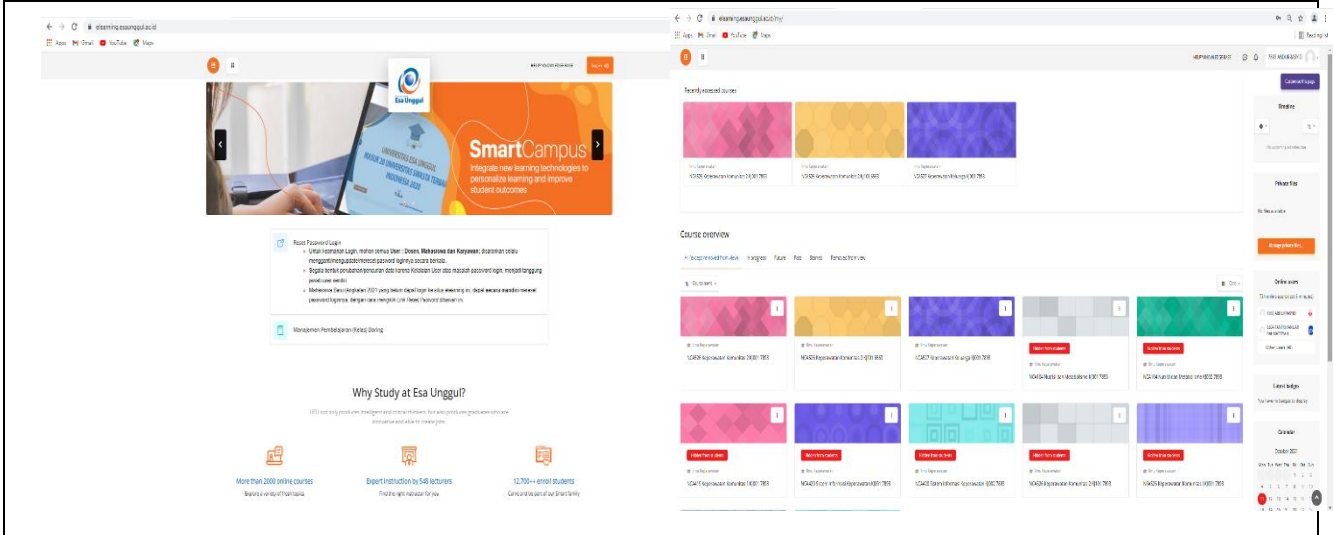
Esa Unggul University produces domestic waste in the form of organic and inorganic waste as much as 140-180 Kg/Day and 5-15 Kg/Day waste. Various programs that have been pursued by Esa Unggul University help reduce the amount of waste that is disposed of in the final landfill, which is 115-145 Kg which is processed to be used as an efficient product. Based on various programs that have been implemented as a commitment of Esa Unggul University in its efforts to create a green environment, Esa Unggul has succeeded in reducing the amount of waste produced for landfill disposal, which is a form of Esa Unggul University's participation in preserving the environment.

Additional evidence link:

<https://greencampus.esaunggul.ac.id/>

Program to Reduce the Use of Paper and Plastic on Campus

Esa Unggul University has 7 programs that are carried out as part of efforts to minimize the reduction in the amount of domestic waste in the form of using paper and plastic in the campus environment, including:



Picture 1. Digital Lecture



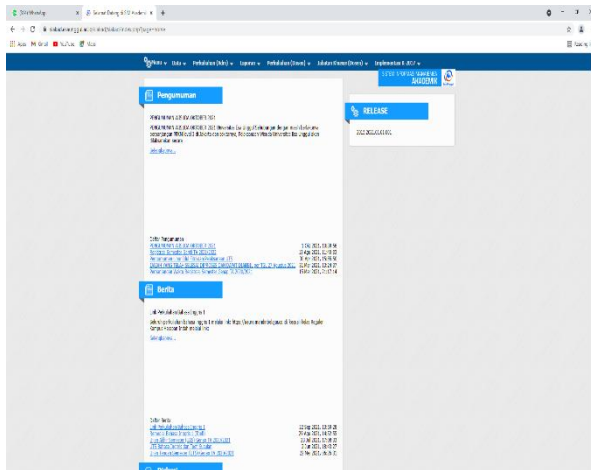
Picture 2. Tumbler usage at Esa Unggul University



Picture 3. Eating and drinking utensils in the workspace



Picture 4. General dispenser facilities



No.	Kode	Nama Perkuliahan	Nilai	SK	KK
1.	42224	Matematika I	8	2	85
2.	42224	Statistika	8	3	4
3.	42224	Bahasa Inggris	8	2	54
4.	42224	Manajemen Informatika	8	3	81
5.	42224	Manajemen Sistem	8	2	84
6.	42224	Manajemen Sistem	8	4	81
7.	42224	Manajemen Sistem	8	4	81
8.	42224	Manajemen Sistem	8	4	81
9.	42224	Manajemen Sistem	8	4	81
10.	42224	Manajemen Sistem	8	4	81
11.	42224	Manajemen Sistem	8	4	81
12.	42224	Manajemen Sistem	8	4	81
13.	42224	Manajemen Sistem	8	4	81
14.	42224	Manajemen Sistem	8	4	81
15.	42224	Manajemen Sistem	8	4	81
16.	42224	Manajemen Sistem	8	4	81
17.	42224	Manajemen Sistem	8	4	81
18.	42224	Manajemen Sistem	8	4	81
19.	42224	Manajemen Sistem	8	4	81
20.	42224	Manajemen Sistem	8	4	81
21.	42224	Manajemen Sistem	8	4	81
22.	42224	Manajemen Sistem	8	4	81
23.	42224	Manajemen Sistem	8	4	81
24.	42224	Manajemen Sistem	8	4	81

Picture 5. Digital system administration system



Picture 6. Paper bag in Canteen

Description:

1. Digital Lecture
Lectures on the Esa Unggul University are carried out using a management information system in the form of eleraning.esaunggul.ac.id which has been developed since 2006. The use of information systems is carried out as a transformation of learning in the digital era and aims to minimize the use of paper in ongoing learning activities. All lecture documents which were originally paper-based in the form of modules, assignment documents, exam question documents, and student assignment and test answer sheets are now available in digital form, thereby reducing paper usage significantly.
2. Use of tumblers for students and employees
Esa Unggul University consistently campaigns for the use of a tumbler or personal drinking water bottle as an effort to reduce the use of single-use plastic bottles. The tumbler usage program is aimed at the entire community of Esa Unggul University with the hope of a healthy lifestyle in preserving the environment by reducing the amount of plastic waste produced by the campus. Every meeting or activity in the field no longer uses plastic bottled mineral water, but the entire community uses personal drinking water bottles to refill water and Esa Unggul University cooperates with the water company Pristin to provide drinking water for the campus community.
3. Provision of eating and drinking utensils in the workspace
Esa Unggul University has a program for providing cutlery, drinking utensils, and cooking utensils in the workspace. This program is intended to improve the comfort and health of employees in activities while working and also as an effort to reduce the use of plastic waste and styrofoam. Eating and drinking utensils provided by Esa Unggul University are placed in each work unit room according to the number of personnel in each unit.
4. Provision of drinking water dispenser facilities
Esa Unggul University has a program to provide drinking water dispenser facilities that can be accessed by the entire campus community as an effort to implement Ministerial Instruction No.1/M/INS/2019 concerning the prohibition of using single-use plastic drinking water packaging and/or plastic bags in the Ministry of Research environment, Technology, and Higher Education. The provision of drinking water using drinking water dispenser facilities placed in strategic locations making it easier for the campus community to access refilled water for consumption. The provision of water at each dispenser machine is facilitated by the drinking water company Pristin to form daily habitual behavior in minimizing the use of single-use plastic bottles.
5. Digital student administration system
Esa Unggul Universitas facilitates students in providing convenience to manage college administration based on the use of the siakad.esaunggul.ac.id digital administration system. All forms of student lecture administration in the form of payment bills, proof of payment, student transcripts, correspondence needs, guidance documentation, recapitulation of student lecture progress, and other administrative needs that were originally based on paper use are now available in one access. The use of a digital administration system in the form of Siakad, in addition to providing convenience for students to access various services needed, it also helps reduce paper usage.
6. Use of friendly shopping bags in the canteen
Esa Unggul University through the general bureau as the manager of the campus environment, instructs all elements in the campus canteen to use packaging products that are easily biodegradable and easy to recycle. The Esa Unggul University Canteen uses “friendly shopping bags” in packaging the food it sells as an effort to reduce plastic waste produced in the canteen environment.
7. Do not use plastic straws
Esa Unggul University ban the use of plastic straws in activities in the university canteen. Starting in 2019, gradually the canteen at Esa Unggul university no longer uses plastic straws and this helps in reducing plastic waste generated in the canteen environment.

Additional evidence link:

<https://greencampus.esaunggul.ac.id/>

Organic Waste Treatment



Picture 1. Esa Unggul University green campus task force team



Picture 2. Organic waste disposal facility at Esa Unggul University



Picture 3. The process of transporting, weighing, and sorting waste at Esa Unggul University



Picture 4. Process of processing organic waste at Esa Unggul University



Picture 5. Process of utilizing Esa Unggul University organic waste products

Description:

Esa Unggul University carries out efforts to manage organic waste generated from the campus community consisting of employees, students, and including the canteen. Efforts to manage organic waste on the Esa Unggul University campus are carried out through the following steps:

1. Formation of a green campus task force team

The university has a green campus task force team consisting of lecturers, cleaners, park staff, and students. This task force team is tasked with monitoring, evaluating, and innovating organic waste management in the Esa Unggul University campus. Activities routinely carried out by the Green Campus Task Force Team include socializing about organic waste management, training on recycling organic waste into compost and eco-enzymes, as well as facilitating the development of research on organic waste management. Through the green campus task force team, the entire community of Esa Unggul University can actively participate in managing campus organic waste so that it has useful and economic value for the welfare of the campus community.

2. Provision of segregated waste disposal facilities

Esa Unggul University seeks to provide segregated waste bins according to the waste category. Trash cans are placed in various corners of closed and open spaces in the campus environment, where it aims to shape the behavior of the campus community so that they are accustomed to disposing of waste according to the category or type of waste. Provision of segregated waste disposal facilities is carried out as an initial stage in implementing organic waste management.

3. The process of transportation to a special TPS for Organic

After the organic waste has been collected in the waste storage places that have been provided, then the janitor will transport the waste to a Temporary Disposal Site (TPS) specifically for organic waste. TPS officers will weigh the waste received at the TPS and then assess the quality of the waste, if the waste comes from organic waste mixed with food scraps and dry leaves, the waste will be stored in the TPS section for composting logistics and if the waste comes from organic waste which is fresh leaves and fresh vegetables, the waste will be stored in the TPS logistics for making ecoenzymes.

4. Processing by a team of garden unit

After the waste is accommodated in the Temporary Shelter (TPS) for organic waste that has been sorted according to its quality, a team consisting of park staff and students will manage the waste into compost and eco-enzyme products. Based on the records of the Esa Unggul University green campus task force team, the organic waste produced is an average of 93.5 kg/day, of which 70-75 kg of organic waste produces 50 kg of compost fertilizer, 5-10 liters of Ecoenzyme fluid, and 5-10 kg of organic waste that is disposed of as a form of waste that cannot be used.

5. Process for utilizing the resulting product Manage waste

Products produced from organic waste management activities at Esa Unggul University are utilized for various internal and external purposes. Compost and ecoenzyme products are used to treat plants and soil in the campus environment to increase fertility and health. The resulting ecoenzyme products are also used to treat garden pond water to maintain the stability of the acidity of the pond water to maintain water quality and fish health in the pond. The products produced are also sold to the community of one superior university who need them at competitive prices and are used in various research and community service activities by lecturers and students.

Additional evidence link:

<https://greencampus.esaunggul.ac.id/>

Inorganic Waste Treatment



Picture 1. Esa Unggul University green campus task force team



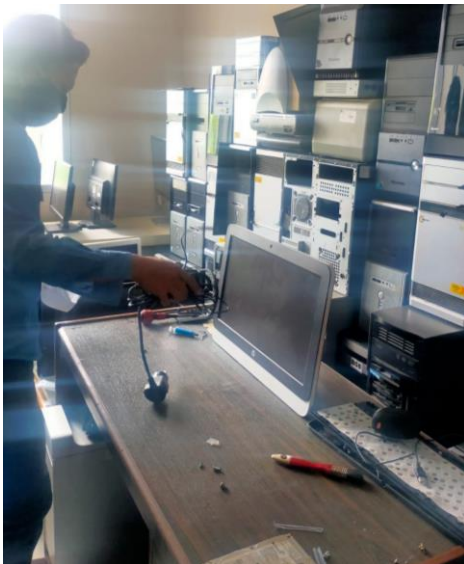
Gambar 2. Inorganic waste disposal facility at Esa Unggul University



Picture 3. The process of transporting, weighing, and sorting inorganic waste at Esa Unggul University



Picture 4. Inorganic waste treatment process at Esa Unggul University





Picture 5. Process of utilizing Esa Unggul University inorganic waste products

Description:

Esa Unggul University carries out efforts to manage inorganic waste generated from the campus community consisting of employees, students, and including laboratories. Efforts to manage inorganic waste on the Esa Unggul University campus are carried out through the following steps:

1. Formation of a green campus task force team

The university has a green campus task force team consisting of lecturers, cleaners, park staff, and students. This task force team is tasked with monitoring, evaluating, and innovating on the management of organic and inorganic waste in the Esa Unggul University campus. Activities that are routinely carried out by the Green Campus Task Force Team include socializing about waste management, training on the use of inorganic waste, and facilitating the development of research on inorganic waste management. Through the green campus task force team, the entire community of Esa Unggul University can actively participate in managing campus inorganic waste so that it has added value and economic value for the welfare of the campus community.

2. Provision of segregated waste disposal facilities

Esa Unggul University has provided segregated trash bins according to the waste category. Trash cans are placed in various corners of closed and open spaces in the campus environment, where it aims to shape the behavior of the campus community so that they are accustomed to disposing of waste according to the category or type of waste. The provision of segregated waste disposal facilities is carried out as an initial stage in implementing waste management including inorganic waste and B3 waste. To accommodate inorganic waste made from plastic, Esa Unggul University provides a special basket of plastic bottles so that waste with economic value can be separated from the initial stage of disposal.

3. The process of transportation to a special TPS Inorganik

After the inorganic waste has been collected in the provided waste storage places, then the cleaning staff will transport the waste to a special temporary disposal site (TPS) for inorganic waste and carry out weighing and recording activities of the type and weight of the waste.

- 1) Plastic inorganic waste

Inorganic waste in the form of plastic bottles is collected at special TPS for plastic bottles. The waste is then compacted to become lumps of plastic waste.

- 2) B3 inorganic waste

Inorganic waste that is toxic/B3 in the form of toxic/B3 waste is collected at special TPS available at the location of the health laboratory. B3 type waste is separated based on liquid and solid. Waste that includes liquids is stored in a special conductor, while waste that includes solids is stored in special yellow plastic B3.

- 3) Inorganic electronic waste

Inorganic waste in the form of electronic goods is mostly produced from computer laboratory equipment and the University IT unit. Electronic type waste is tamped in a special room at the electronic TPS in the computer laboratory building.

4. Inorganic waste treatment process

After the waste is collected in the Temporary Shelter (TPS) according to the type of inorganic waste collected, then the officers recycle the waste according to its type so that it has use and economic value and minimizes the final amount of waste that is disposed of. Waste processing is carried out based on each type, namely:

1) Plastic inorganic waste

Inorganic plastic waste that has been collected and compacted is then used for student learning purposes, especially for art and design students. Plastic waste is converted into art products that are exhibited and have economic value to be auctioned in exhibition events. Some of the plastic waste that has been collected and compacted according to its type is sold to waste collectors located around the Esa Unggul University campus. The funds obtained from the sales proceeds are used to help develop campus waste management activities and also help improve the welfare of janitors at Esa Unggul University. Based on the records of the Esa Unggul University green campus task force team, the amount of inorganic plastic waste produced is an average of 62.5 kg/day, of which 50 kg of waste can be used for student creativity development activities and waste management cash funds, where an average of an average of 12.5 kg is wasted waste.

2) B3 inorganic waste

Inorganic B3 waste that has been accommodated in a special TPS for B3 waste will then be assessed for quality by the health laboratory team. Liquid B3 waste which is the result of practical work and research in health laboratories that does not contain heavy metals but contains bacteria or fungi is used as a composer when making eco-enzyme fluids and also compost fertilizers after neutralization and balancing of acidity levels have been carried out. Based on the records of the Esa Unggul University green campus task force team, inorganic B3 waste produced is an average of 2.4 Kg/day of solid waste and 2.6 Kg/day of liquid waste, of which each Kilogram of liquid waste produces 2 Liters of Composer ecoenzyme and leaves 3-5% liquid waste that needs to be disposed of, while all solid waste is disposed of. The disposal of B3 waste is carried out in collaboration with a third party, namely PT Jalan Hijau as the manager of infectious B3 waste, so that in this case the B3 waste produced by Esa Unggul University is ensured to be disposed of according to procedures to prevent contamination with the surrounding environment.

3) Electronic inorganic waste

The electronic inorganic waste that has been accommodated in the TPS (Warehouse) specifically for electronics is then assessed for the quality of the components by the computer laboratory team. Electronic components that still have good functions will be separated as spare parts components for maintenance purposes of electronic devices that are still functioning and used by the Esa Unggul campus community. In addition, electronic components that have good functions are used for free service purposes for electronic devices for students and lecturers who need them as well as charitable activities for people in need. Electronic waste that has been sorted and can no longer be used for maintenance of tools and free service services, is then separated by type and then sold to waste collectors around the Esa Uggul University campus. The funds obtained from the sales proceeds are used to help develop campus waste management activities and also help improve the welfare of janitors at Esa Unggul University. Based on the records of the Esa Unggul University green campus task force team, the average electronic inorganic waste produced is 15 kg/month, most of which are used as spare parts and which are still fit for donation.

5. Process for utilizing the resulting product Manage waste

Products produced from inorganic waste management activities at Esa Unggul University are utilized for various internal and external purposes. Inorganic waste products include composers for making fertilizers and ecoenzyme fluids, spare parts for maintenance of electronic equipment, student artwork, logistics for charity activities, spare parts for free electronic service services, and development funds for employee welfare.

Additional evidence link:

<https://greencampus.esaunggul.ac.id/>

Toxic Waste Treatment



Picture 1. Tempat pebuangan limbah di ruang-ruang laboratirum kesehatan Universitas Esa Unggul



Picture 2. The process of transportation by the cleaning staff of Esa Unggul University



Picture 3. Process for placing toxic waste at Esa Unggul University



Picture 4. The process of testing and processing the quality of toxic waste at Esa Unggul University

Description

Esa Unggul University carries out the management of toxic waste generated in activities on campus. Toxic waste at Esa Unggul University is generated from the activities of the health laboratory. Efforts are made to manage toxic waste or B3 waste in the following ways:

1. Provision of special B3 waste disposal facilities
Esa Unggul University applies the 14001 standard in maintaining occupational health and safety in health laboratories. Laboratory waste management is managed starting from how to dispose of it, how to accommodate it, to distribution for further disposal. Each laboratory room has a solid and liquid waste storage area according to disposal safety standards. Waste is disposed of in a trash can lined with special yellow plastic for B3 waste, while liquid waste is disposed of in a special plastic tube for B3 waste which is divided into two, namely heavy metal waste and bacterial or fungal waste.
2. The process of transportation to a special TPS B3
After the waste that is classified as toxic is accommodated in the dumping site in each room, the waste will be transported by trained cleaners using personal protective equipment to the location of the temporary storage room with the 3 T principle (collect, weigh, and place) according to standard procedures.
3. The process of sorting the quality of B3 waste
The waste that has been placed in the temporary storage room is assessed by the laboratory staff for quality of the waste for sampling and measuring the levels of heavy metal contamination, acidity (Ph) and bacteria. Liquid waste that contains bacteria but does not contain heavy metals is then diluted with sterile water to neutralize acidity (pH) until it reaches normal limits.
4. The process of utilizing the products resulting from B3 waste management (quantity)
Toxic waste in the form of liquid that has been tested and neutralized its acidity level is then used as a liquid for making coenzymes. Toxic waste management in the amount of 5 Liters of waste can be produced on average 15 liters of liquid for making coenzymes. Toxic waste generated by the laboratory as much as 20 Liters of liquid waste per month and 17 Kg of solid waste per month, where the average per month is 15 liters of waste is reprocessed to be used as a liquid for making eco enzymes. This allows the laboratory to reduce liquid waste disposal by 75% of the amount produced per month. Waste that cannot be processed by the laboratory is disposed of through periodic transportation activities by a third party, namely PT Jalan Hijau as the infectious waste manager.

Additional evidence links:

<https://greencampus.esaunggul.ac.id/>

Sewage Disposal



Picture 1. Sewage disposal treatment system in Esa Unggul University



Picture 2. The process of testing water quality in Esa Unggul University

Description:**1. Provision of Shelters**

Esa Unggul University is committed to providing a collection of waste that comes from bathroom waste and used dish washing used in canteens and places of worship. This reservoir will lead to an aeration reservoir which has a blower with a driving engine to circulate oxygen. After some time, the aerated waste is transferred to a sedimentation tank.

2. In the sedimentation reservoir, there will be a separation of the sludge originating from the sediment from the waste. Sludge that still contains microorganisms is flowed back to the reactor/aeration reservoir to be processed to maintain the concentration of bacteria.**3. The water that has been separated from the sedimentation tank will be channeled to the university's water source to be reused by the garden unit for watering plants in the university environment.****4. The university also checks the waste water content in the health laboratory unit at least once every three months to ensure that the results of waste treatment are in accordance with water quality standards.****5. The treated water is reused for watering plants and urinals.****Additional evidence link:**

<https://greencampus.esaunggul.ac.id/>

4

Water

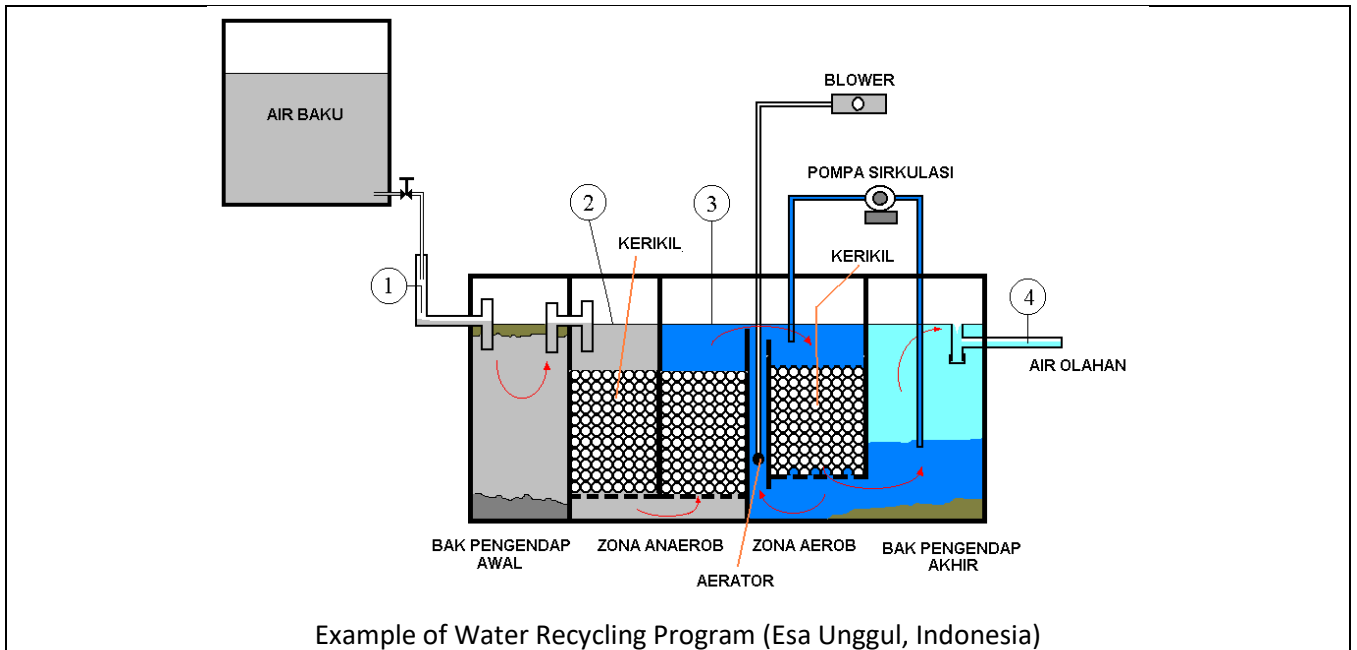
Water Conservation Program Implementation



Description:

Buildings of Esa Unggul University have separate waste disposal systems, for wastewater and clean water (rain water). Rainwater is thus collected from the roof of the building and then discharged into local ponds and canals around the building. Esa Unggul also has a building where all the rainwater is collected for flushing toilets and for watering plants in the building. On our campus, we have a separate waste disposal system. We collect rainwater from the roof, parking area etc. And throw it in the ponds and channels on our campus.

Water Recycling Program Implementation



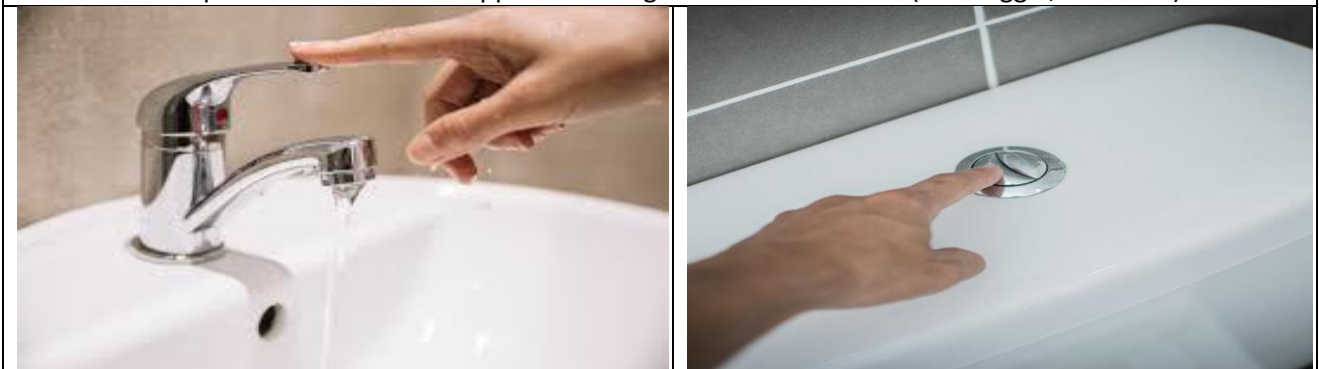
Description:

Light-level water treatment program, and the amount of rainwater Recycled water is also used for garden sprinkler systems, toilet flushes, and used in fish ponds.

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



Example of Water Efficient Appliances Usage Flush Valve Urinoir (Esa Unggul,Indonesia)



Kran Air (Tap Water)
Tap with efective reduce water consumption.

Toilet push valve
Toilet with the efective push valve can reduce water as efective consumption.

Description:

Urinoir the system with high temperature also efective and efisien for usage. We can reduce water with minimun flush.

Appliance	Total Number	Total number water Efficient appliances	Percentage
Toilet	250	150	60%
Wastafel	150	100	66%
Etc.
		Average Percentage	63%



5

Transportation

Vehicle Population



Description:

The number of vehicles, both cars and motorbikes based on the campus population at esa Unggul University, can currently be controlled by various programs to support the green campus program, including the student campus bus use program, the bicycle use program, as well as future planning programs with restrictions on odd-even vehicle plates, so that the population of motorized vehicles on campus can be controlled properly.

Additional evidence link:

<https://greencampus.esaunggul.ac.id/>

Shuttle Services

Rute Shuttle Campus Bus Universitas Esa Unggul

Lapian tanpa judul

Petunjuk arah dari Universitas Esa Unggul, Jalan Arjuna Utara, RTU/IRU2, Duri Kaya, Kota Jakarta Barat, Depok, Bekasi, Bekasi ke Universitas Esa Unggul Bekasi, Harapan Indah, Jalan Boulevard Raya Kota Harapan Indah, Harapan Mulya, Kota Bekasi, Jawa Barat

- Universitas Esa Unggul, Jalan Arjuna Utara, RTU/IRU2, Duri Kaya, Kota Jakarta Barat, Depok, Bekasi, Bekasi
- Universitas Esa Unggul, Kampus Cita Raya, Melkar Satrio, Tangerang, Banten
- Universitas Esa Unggul, Bekasi, Jalan Boulevard Raya Kota Harapan Indah, Harapan Mulya, Kota Bekasi, Jawa Barat

Rute Shuttle Campus Bus Universitas Esa Unggul

Shuttle Services (Esa Unggul University, Indonesia)

HALTE TRANS - KAMPUS

SENIN	SELASA	RABU	KAMIS	JUM'AT	SABTU
7:15	7:15	7:15	7:15	7:15	9:15
8:15	8:15	8:15	8:15	8:15	9:45
8:45	8:45	8:45	8:45	8:45	11:45
9:45	9:45	9:45	9:45	9:45	12:45
11:15	11:15	11:15	11:15	11:15	13:30
12:45	12:45	12:45	12:45	12:45	14:15
14:15	14:15	14:15	14:15	14:15	14:45
15:15	15:15	15:15	15:15	15:15	16:00

KAMPUS - HALTE TRANS

SENIN	SELASA	RABU	KAMIS	JUM'AT	SABTU
8:00	8:00	8:00	8:00	8:00	9:30
8:30	8:30	8:30	8:30	8:30	11:30
9:30	9:30	9:30	9:30	9:30	12:30
10:00	10:00	10:00	10:00	10:00	13:15
12:30	12:30	12:30	12:30	12:30	14:00
13:00	13:00	13:00	13:00	13:00	14:30
13:45	13:45	13:45	13:45	13:45	15:45
16:00	16:00	16:00	16:00	16:00	16:30

KAMPUS - GEDUNG M,N

SENIN	SELASA	RABU	KAMIS	JUM'AT	SABTU
--	7:30	--	--	--	11:45
--	--	--	--	--	16:00
--	10:15	--	--	--	--
--	--	--	--	--	--
--	18:45	--	--	--	--

GEDUNG M,N - KAMPUS

SENIN	SELASA	RABU	KAMIS	JUM'AT	SABTU
--	10:30	--	--	--	14:30
--	--	--	--	--	--
--	13:00	--	--	--	17:50
--	--	--	--	--	--
--	20:40	--	--	--	--

- Jadwal dapat berubah sewaktu - waktu
 - Jadwal tersebut bisa berubah/off beroperasi jika Bus digunakan kegiatan mahasiswa
 - Untuk konfirmasi keberangkatan dapat menghubungi Driver Bus Bapak Edi di no. 0852 1099 0218

KRITIK DAN SARAN DAPAT MENGHUBUNGI:
 SARPRAS : 0819 81 7099

www.esaunggul.ac.id | Universitas Esa Unggul Tangerang | @EsaUnggul_Citra | uniku.esaunggul_tangerang

Shuttle Services – Bus Timetable

Description:

The shuttle service is served on campus specifically for use by students and the campus academic community according to a predetermined schedule starting from the shuttle from the shuttle to campus and vice versa and this is carried out regularly and free of charge every Monday to Saturday. To see all bus schedules, the civitas can see the schedule directly on campus wall magazines, bulletin boards and on the bus itself.

We are also committed to implementing a green campus so that we continue to add bus fleets to meet the shuttle program using campus buses, currently we have 3 buses.

It can be seen in the evidence that we attach that we have run scheduled shuttle travel routes so that student travel from the shuttle to campus or vice versa can be well controlled, as well as travel between campuses we can accommodate these transportation needs.

Additional evidence link:

<https://greencampus.esaunggul.ac.id/universitas-esa-unggul-tambah-bus-kampus/>

Zero Emission Vehicles (ZEV) Policy on Campus

	
<p>Bike Park (University Esa Unggul Tangerang ,Indonesia)</p>	<p>Pedestrian Path</p>
	
<p>Bike Park (Univeristy Esa Unggul Jakarta,Indonesia)</p>	<p>Pedestrian Path</p>

Description:

Esa Unggul University has a policy regarding zero-emission vehicles based on the Chancellor's Decree to carry out various activities the program as a form of implementation in realizing an environmentally friendly campus and providing zero-emission vehicles, namely bicycles for the operation of campus security activities in carrying out security and control tasks in the campus area.

The entire campus of Esa Unggul University is very friendly for cyclists and pedestrians so that paths for people with disabilities have been arranged and Many have vehicle-free lanes for these users, there is a bicycle parking area to accommodate as many as 40 bicycles in the bicycle park, we also provide a special bathroom for bicycle users if they are going to take a shower and change clothes

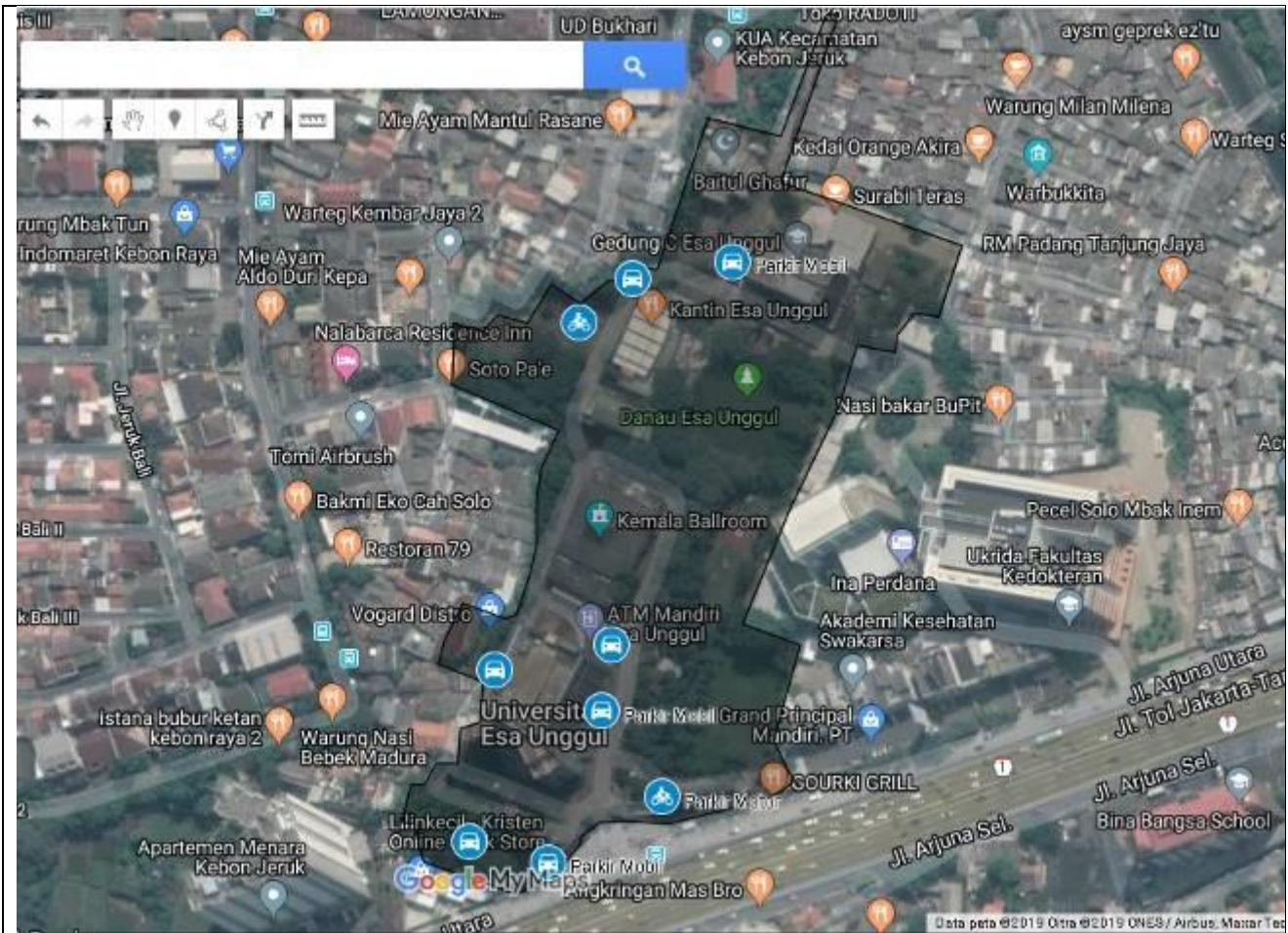
then there is also an indication of the 5 mph vehicle speed limit on all internal roads, and bicycle lanes on public roads.

For campus security personnel activities are also carried out using Patrol Bikes to control the security of the campus environment.

Additional evidence link:

<https://greencampus.esaunggul.ac.id/>

Ratio of Parking Area to Total Campus Area



Parking Area to Total Campus Area (Universitas Esa Unggul, Jakarta)



Parking Area to Total Campus Area (Universitas esa Unggul, Bekasi)



Parking Area to Total Campus Area (Universitas esa Unggul, Tangerang)

Description:

The ratio of the total available parking for both motorbikes and cars to the total campus area at the Kebon Jeruk campus, Bekasi Campus and Tangerang Campus are as follows:

- a. Total main campus area: 40.497 m²
Total parking area Campus Jakarta = 4200m² (552 Motorbike , 105 Car).
- b. Total main Campus Bekasi : 30.000²
Total Parking area : 3420m² (200 Motorbike, 40 car)
- c. Total Main Campus Tangerang : 15.620m²
Total Parking Area : 2.293m² (154 Motorbike, 71 Car)

Additional evidence link:

<https://greencampus.esaunggul.ac.id/>

Program to limit or decrease the parking area on campus for the last 3 years (from 2018 to 2020)



Description:

Transportation Program at Esa Unggul University is to launch a program to help reduce air pollution, namely using public transportation, bicycles to campus and odd-even Vehicle restrictions.

Number of Transportation Initiatives to Decrease Private Vehicles on Campus



Universitas Esa Unggul KAMPUS II TANGERANG GREEN CAMPUS 6 15 45 Kampus Merdeka

PEMBATASAN LALU LINTAS GANJIL GENAP

Kampus II Tangerang
#Kampusbersih

www.esaunggul.ac.id Universitas Esa Unggul Tangerang @EsaUnggul_Citra univ.esaunggul_tangerang

Programm Initiatives (Esa Unggul University, Indonesia)

Description:

The initiative program or program plan that will be campaigned by Esa Unggul University to limit the population of vehicles in the campus environment is to jointly follow the Jakarta regional government regulations that have been proclaimed, namely regarding the application of Odd-Even vehicles based on the date and vehicle number plate so that with this program it will help reduce the population of vehicles every day and restrictions on vehicles in the campus environment.

Additional evidence link:

<https://greencampus.esaunggul.ac.id/>

Pedestrian Path Policy on Campus



Pedestrian (Universitas Esa Unggul, Jakarta)



Description:

1. Separator between road for vehicle and pedestrian path.
2. Ramps and guiding blocks which have suitable design for pedestrian having physical disabilities.
3. Street lamp for pedestrian in night.



6

Education and Research

Number of Courses/Subjects Related to Sustainability Offered

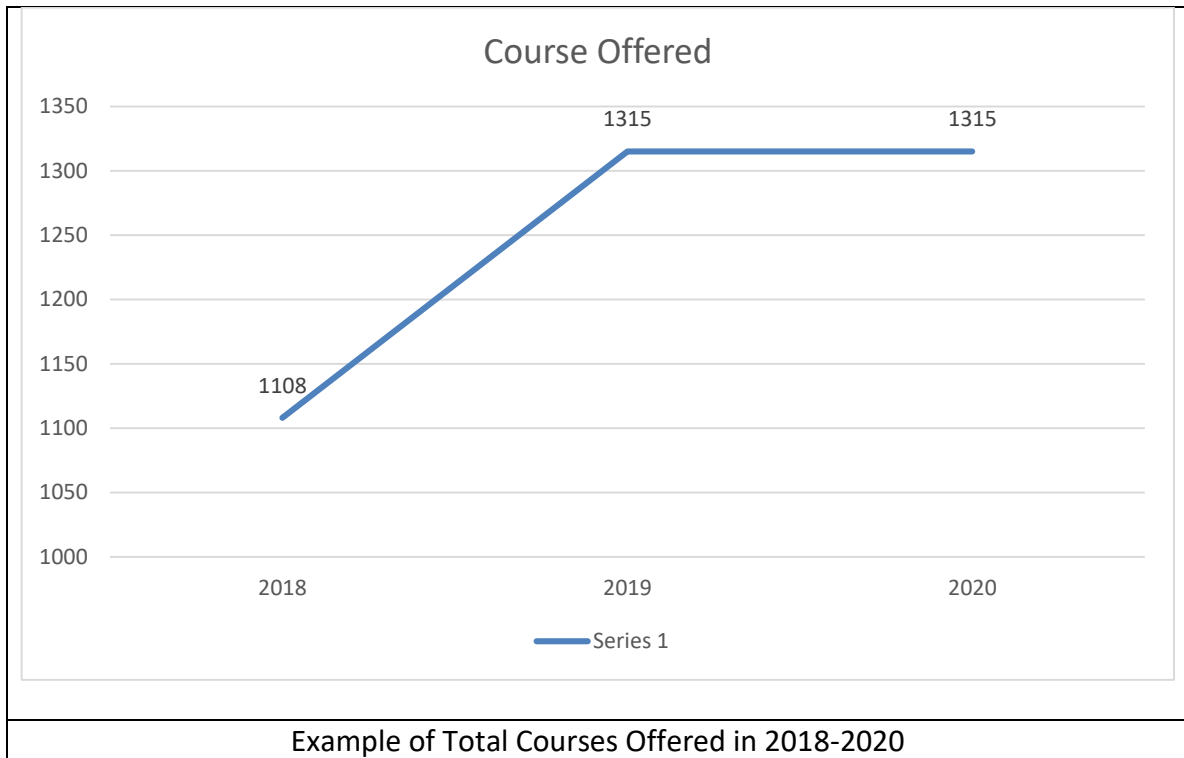
Public Health	
Courses	Description
Environmental audit management system	Incorporate themes relating sustainability and focusing to audit environment system
Environmental Health Planning	Incorporate themes relating sustainability and focusing to make green environment
Environmental Health Risk Analysis	Incorporate themes relating sustainability and focusing to manage risk in environment
Environmental Health Laboratory	Incorporate themes relating sustainability and focusing to analysis some chemical hazard or pollutant in the environment
Environmental Impact Analysis	Incorporate themes relating sustainability and focusing to analysis the effect of some hazards in the environment
Environmental Current Issues	Incorporate themes relating sustainability and focusing to solve some issues about environment
Emergency Response Environmental Health	Incorporate themes relating sustainability and focusing to make emergency response of environment
Clean Water Management	Incorporate themes relating water sustainability and focusing to provide clean water
Sanitary Technology Engineering	Incorporate themes relating sustainability and focusing to provide sanitary technology
Environmental Epidemiology	Incorporate themes relating diseases and risk factor of diseases in the environment
Environmental Health Basics	Incorporate themes relating green environment and sustainability
Environmental Quality Analysis	Incorporate themes relating sustainability and focusing to analysis the quality of environment
Accounting	
Courses	Description
Intermediate financial Accounting 2	Incorporate themes relating economic sustainability and focusing in financial
Public sector accounting	Incorporate themes relating economic sustainability and focusing in public financial
Advanced Financial Accounting 2	Incorporate themes relating economic sustainability and focusing in financial
Accounting Inspection	Incorporate themes relating economic sustainability and focusing in financial and auditing
International Accounting	Incorporate themes relating economic sustainability and focusing in international accountancy
Macro economics	Incorporate themes relating economic and focusing the behavior and performance of an economy as a whole

Microeconomics	Incorporate themes relating economic and focusing the behavior of individuals and firms in making decisions regarding the allocation of scarce resources and the interactions among these individuals and firms
Regional Planning	
Courses	Description
Ecology And Analysis of Natural Resource	Incorporate themes related to ecology and focusing to use renewable and non renewable energy in environment
Site Planning	Incorporate themes related sustainability and focusing to process the structure of space and forming intermediate spaces on land
Regional and City Economics	Incorporate themes related sustainability and focusing to aspects of location and regional spatial planning into economic analysis
Urban Revitalization	Incorporate themes related sustainability and focusing to recycle and revitalization
Strategic Environmental Studies	Incorporate themes related green environment and sustainability and focusing to carry out by local governments before granting land and forest management permits
Example of Courses/Subjects Related to Sustainability (Universitas Esa Unggul, Indonesia)	

Description:

Based on the table, it is example of courses related sustainability offered by Esa Unggul University. The number of courses related to sustainability and the environment at UEU can be seen in the following details: Tahun 2018/2019 : 334 courses
 2019/2020 : 400 courses
 2020/2021 : 450 courses

Total Number of Courses/Subjects Offered



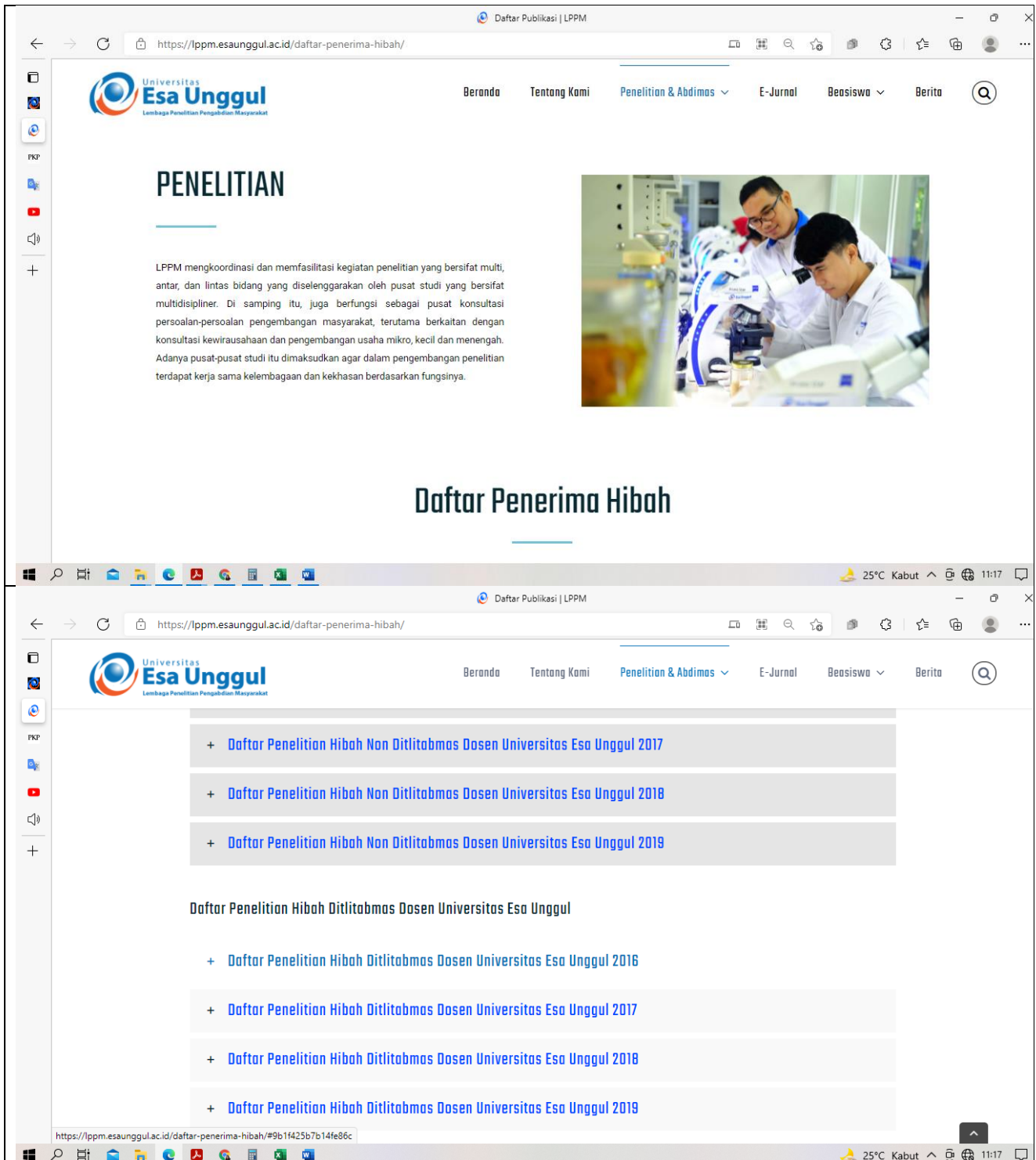
Description:

Esa Unggul offers a number of courses for 3 academic years with details:

2018	1108
2019	1315
2020	1315

Total number of courses offered in 2020 = 1315 courses

Total Research Funds Dedicated to Sustainability Research (in US Dollars)




The screenshot displays the website of Universitas Esa Unggul, specifically the 'Daftar Publikasi | LPPM' page. The page features a navigation menu with 'Beranda', 'Tentang Kami', 'Penelitian & Abdimas', 'E-Jurnal', 'Beasiswa', and 'Berita'. The main content area is titled 'PENELITIAN' and includes a paragraph describing the LPPM's role in coordinating and facilitating multi-disciplinary research activities. A photograph of two researchers in a laboratory is also present. Below this, the section 'Daftar Penerima Hibah' lists various research grants, categorized into 'Non Ditlitabmas' and 'Ditlitabmas' for the years 2016 through 2019.

Universitas Esa Unggul
Lembaga Penelitian Pengabdian Masyarakat

Beranda Tentang Kami Penelitian & Abdimas E-Jurnal Beasiswa Berita

PENELITIAN

LPPM mengkoordinasi dan memfasilitasi kegiatan penelitian yang bersifat multi, antar, dan lintas bidang yang diselenggarakan oleh pusat studi yang bersifat multidisipliner. Di samping itu, juga berfungsi sebagai pusat konsultasi persoalan-persoalan pengembangan masyarakat, terutama berkaitan dengan konsultasi kewirausahaan dan pengembangan usaha mikro, kecil dan menengah. Adanya pusat-pusat studi itu dimaksudkan agar dalam pengembangan penelitian terdapat kerja sama kelembagaan dan kekhasan berdasarkan fungsinya.



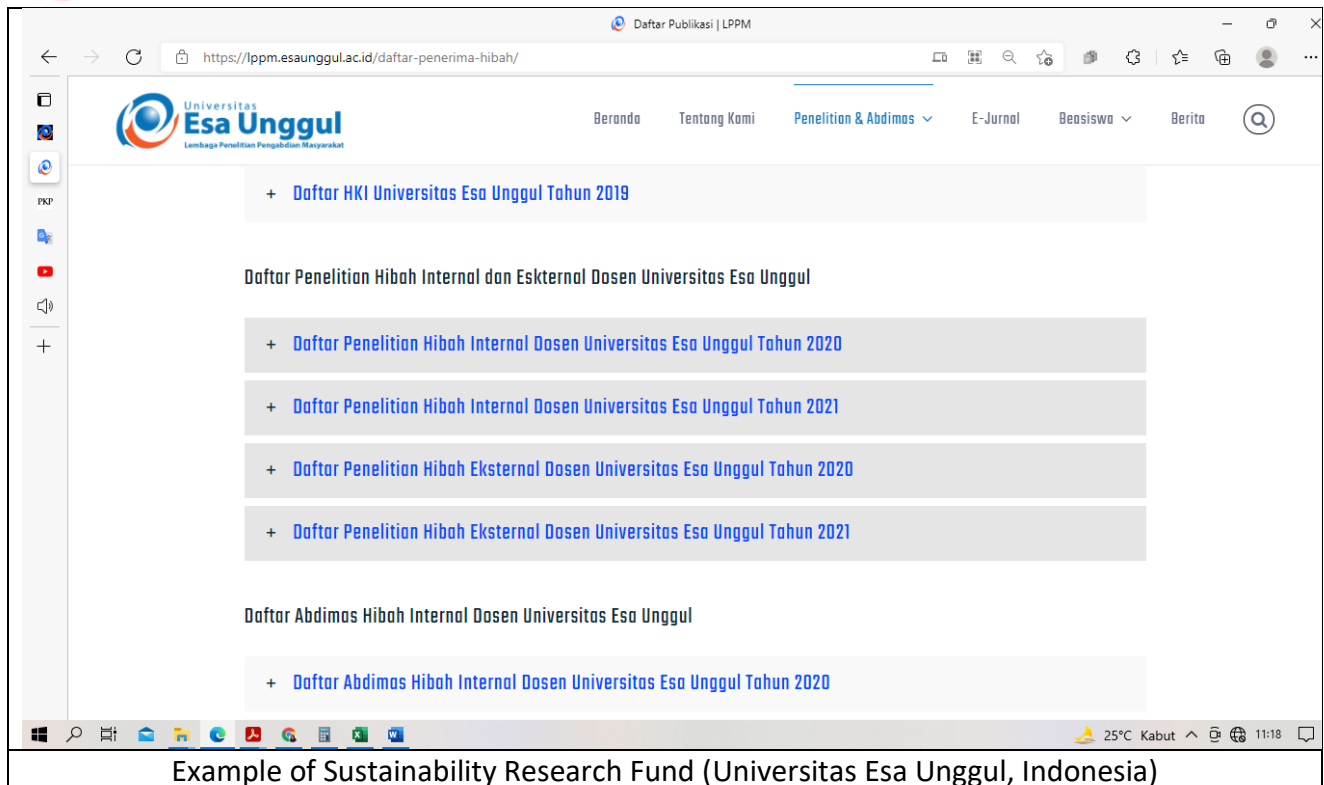
Daftar Penerima Hibah

- + [Daftar Penelitian Hibah Non Ditlitabmas Dosen Universitas Esa Unggul 2017](#)
- + [Daftar Penelitian Hibah Non Ditlitabmas Dosen Universitas Esa Unggul 2018](#)
- + [Daftar Penelitian Hibah Non Ditlitabmas Dosen Universitas Esa Unggul 2019](#)

Daftar Penelitian Hibah Ditlitabmas Dosen Universitas Esa Unggul

- + [Daftar Penelitian Hibah Ditlitabmas Dosen Universitas Esa Unggul 2016](#)
- + [Daftar Penelitian Hibah Ditlitabmas Dosen Universitas Esa Unggul 2017](#)
- + [Daftar Penelitian Hibah Ditlitabmas Dosen Universitas Esa Unggul 2018](#)
- + [Daftar Penelitian Hibah Ditlitabmas Dosen Universitas Esa Unggul 2019](#)

https://lppm.esaunggul.ac.id/daftar-penerima-hibah/#9b1f425b7b14fe86c



Example of Sustainability Research Fund (Universitas Esa Unggul, Indonesia)

Description:

Total research fund dedicated to sustainability research in 2018 = 207.312,04 US Dollars

Total research fund dedicated to sustainability research in 2019 = 286.200,44 US Dollars

Total research fund dedicated to sustainability research in 2020 = 212.516,45 US Dollars

The averaged annum last 3 years of research fund dedicated to sustainability research = 235.342,97 US Dollars

Additional evidence link (i.e., for videos, more images, or other files that are not included in this file):

Picture 1, 2 and 3 : <https://lppm.esaunggul.ac.id/daftar-penerima-hibah/>

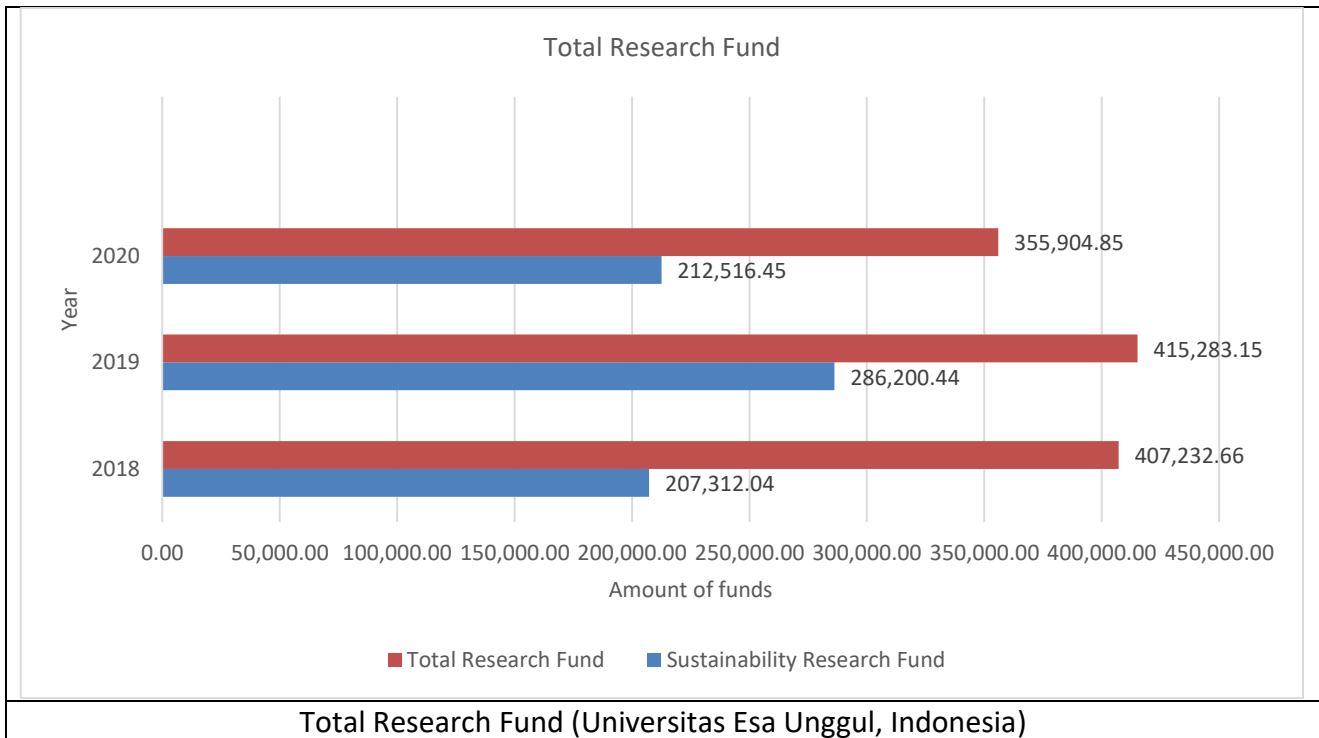
Data penelitian terkait sustainability :

https://drive.google.com/drive/folders/1i8XZfao_fjW8M5kYmyZqelZEjKsELqEw?usp=sharing

Data dana penelitian terkait sustainability :

https://drive.google.com/drive/folders/1i8XZfao_fjW8M5kYmyZqelZEjKsELqEw?usp=sharing

Total Research Funds (in US Dollars)



Description:

Total research fund in 2018 = 407.232,66 US Dollars

Total research fund in 2019 = 415.283,15 US Dollars

Total research fund in 2020 = 355.904,85 US Dollars

The averaged annum last 3 years of research fund = 392.806,88 US Dollars

Additional evidence link (i.e., for videos, more images, or other files that are not included in this file):

Evidence in 2018 :

<https://docs.google.com/spreadsheets/d/1y3Kbtg7BFG4MWjrd1tXR5IlobRwUINJN/edit?usp=sharing&oid=113355796815171952876&rtpof=true&sd=true>

Evidence in 2019 : https://docs.google.com/spreadsheets/d/1Wv_5BjMnP5ZSyKQ_z_Ur2xrn-YfB4HQv/edit?usp=sharing&oid=113355796815171952876&rtpof=true&sd=true

Evidence in 2020 :

<https://docs.google.com/spreadsheets/d/1Eo2WlraDD0m2bYp8sclMHPVAQMjJeoNR/edit?usp=sharing&oid=113355796815171952876&rtpof=true&sd=true>

https://docs.google.com/spreadsheets/d/1ZX4Tcs8FMtmhg9v_daFHGw5j-K8frisq/edit?usp=sharing&oid=113355796815171952876&rtpof=true&sd=true

Number of scholarly publications on sustainability

1

Google Scholar search results for "esa unggul; green".

URL: https://scholar.google.com/scholar?q=esa+unggul%3B+green&hl=en&as_sdt=0%2C5&as_ylo=2018&as_yhi=2020

Search results: About 1,200 results (0.05 sec)

Articles:

- [PDF] AWARENESS ORGANIC, ADVERTISING, PRICE, DIRECT SELLING TOWARDS ATTITUDE AND PURCHASE INTENTION OF ORGANIC. [PDF] esaunggul.ac.id
- [PDF] UTILIZATION OF PURPLE SWEET POTATO FLOUR AND GREEN BEAN FLOUR IN THE MAKING SPORTS SNACK BAR. [PDF] esaunggul.ac.id
- [PDF] Optimizing Antenatal Care by Digitalization Pregnancy Risk Screening. [PDF] aptirmik.or.id
- [PDF] Increasing ecoliteracy on the impact of organic waste management using a problem a problem-solving the model. [PDF] esaunggul.ac.id
- [HTML] How packaging, product quality and promotion affect the purchase. [HTML] cyberleninka.ru

2

Google Scholar search results for "esa unggul; green & sustainability".

URL: https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&as_ylo=2018&as_yhi=2020&q=esa+unggul%3B+green+%26+sustainability...

Search results: About 256 results (0.05 sec)

Articles:

- [PDF] AWARENESS ORGANIC, ADVERTISING, PRICE, DIRECT SELLING TOWARDS ATTITUDE AND PURCHASE INTENTION OF ORGANIC. [PDF] esaunggul.ac.id
- [PDF] Increasing ecoliteracy on the impact of organic waste management using a problem a problem-solving the model. [PDF] esaunggul.ac.id
- [PDF] Optimizing Antenatal Care by Digitalization Pregnancy Risk Screening. [PDF] aptirmik.or.id
- [PDF] The Implication of Green Marketing that Influence the Customer Awareness Towards their Purchase Decision. [PDF] mercubuana.ac.id

universitas esa unggul; water & sustainability - Google Scholar

https://scholar.google.com/scholar?start=0&q=universitas+esa+unggul%3B+water+%26+sustainability&hl=en&as_sdt=0.5&as_ylo=20...

Google Scholar universitas esa unggul; water & sustainability

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Since 2017
Custom range...
2018 — 2020
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[PDF] Community Led Total Sanitation (CLTS) in Cikupa Village and Teluknaga Village in Tangerang, Indonesia [PDF] researchgate.net
 DA Kusumaningtiar, G Vionallita - SCOPUS IJPHRD CITATION ... 2019 - researchgate.net
 ... to strengthen efforts to accostume clean and healthy lives, prevent the spread of environment-based diseases, improve community capacity, and implement government commitments to improve access of drinking **water** and basic sanitation **sustainably** to achieve SDGs ...
 ☆ 99 Related articles All 4 versions

The Economic Impact of **Water** Pollution [PDF] ukrida.ac.id
 SPD AnantaJaya, MS Rahmadani, S Zen... & Universitas Esa ... 2019 - papers.ssrn.com
 ... This is because wastewater can be seen and considered as an alternative cost-efficient and **sustainable** source of energy due to the nutrients, organic and organic minerals that are found in the polluted **water** that are filled with residues from the fertilizers. Furthermore, there are ...
 ☆ 99 Related articles

[PDF] Mental Health Understanding from Culture Perspective: A Study of Lay People Mental Health Literacy [PDF] ukrida.ac.id
 ANovianty, L Cuwandayani - 2019 - repository.ukrida.ac.id
 ... University in 2020, I ask all academic resources, all of our lecturers, Dean, Vice Dean, and all heads of departments of **Esa Unggul** ... ICOH, this conference is one of our programs that are aligned to give contribution on achieving **Sustainable** Development Goals (SDGs 2030), ...
 ☆ 99 Related articles All 2 versions

Formulation and Evaluation of Sunscreen Gels Containing Mangiferin Isolated from Phaleria macrocarpa Fruits [PDF] interactivedns.com
 ARY Eff, ST Rahayu - International ... 2019 - jponline.phcog.interactivedns.com
 ... compounds that cause health hazards and ecological **sustainability**. 3. Additionally, bioactive ... the study protocol was allowed by the **Esa Unggul** University Research Ethics committee. ... Carboloph 934 was dispersed into 50 mL of distilled **water** and stirred to naturally form a gel ...
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 L Garniati, A Iswadi, R Praptiwi ... - IOP Conference Series ... 2019 - iopscience.iop.org
 ... One of the main pressures to creation of **sustainable** livelihoods for the local community is over extraction of **water** supplies and increasing waste generation. Due to economic activities in Selayar and outwith the regency, plastic debris has been found to be stranded around ...
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[PDF] DIFFERENCES OF COMMUNITY LED TOTAL SANITATION (CLTS) IN VILLAGES OF CIKUPA AND VILLAGE OF TELUKNAGA IN TANGERANG DISTRICT [PDF] esaunggul.ac.id
 DA Kusumaningtiar, G Vionallita - 13th IEA SEA Meeting and ... 2018 - digitlib.esaunggul.ac.id
 ... implement government commitments to improve access of drinking **water** and basic sanitation **sustainably** to achieve SDGs. Sanitation efforts based on Permenkes No. 3, 2014 about STBM, namely not defecation at any place, washing hands with soap, managing safe drinking ...
 ☆ 99 Related articles All 3 versions

Land change modeler for predicting land cover change in Banjarmasin City, South Borneo (2014-2022) [PDF] iop.org
 PA Aryaguna, AN Saputra - IOP Conference Series: Earth and ... 2020 - iopscience.iop.org
 ... The result of this balance is the achievement of environmental function **sustainability** [1] ... The effects of land cover change also influence local ecological conditions such as **water** pollution... Thanks to **Esa Unggul** University for their assistance and support in terms of resource tools ...
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Length of paternal education is associated with height-for-age of school children in rural area of Sepatan Timur-Tangerang [PDF] persagi.org
 D Angkasa, L Sitoayu, I Jus'at - GIZI INDONESIA, 2018 - ejournal.persagi.org
 ... Among those, parental care pattern plays an important and **sustainable** roles in children growth ... in term of availability of appropriate drinking-**water** sources, clean and healthy life style, and ... of Health Sciences, **Universitas Esa Unggul** under the serial number 067/FIKES/II/2015, ...
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https://iopscience.iop.org/article/10.1088/1755-1315/500/1/012002/meta

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[HTML] The Construct of Community Empowerment through Social Compass Strategy: Case Study of Empowerment in Processing Waste and Water Hyacinth [HTML] mindamas.com
AS Akhyadi, IS Sadikin - EDUCARE, 2020 - journals.mindamas.com
Abstract ABSTRACT. Community empowerment is an effort to provide power or strength for the community to be independent and get away from problems they have been through. Community empowerment is a concept of economic development encapsulating social values. A (...)
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Evaluation of integrated university management information system using COBIT 5 domain DSS
AI Saridewi, DM Wiharta... - Conference on Smart ..., 2018 - ieeexplore.ieee.org
... to administer **Esa Unggul** University's RPL laboratory. This paper focuses on optimizing the use of resources. The results of this study are that governance in Lab RPL has generally increased and can then be used as a reference for the RPL lab governance at **Esa Unggul** ...
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[PDF] BIO-NANOPARTICLES: GREEN SYNTHESIS OF GOLD NANOPARTICLES AND ASSESSMENT OF BIOLOGICAL EVALUATION [PDF] esaunggul.ac.id
RD Perlywi, EPS SUWALDI, R Martien - Int J App Pharm, 2019 - digilib.esaunggul.ac.id
... To reduce further chemical interventions and to improve the **sustainability** of the process, alternative biosynthetic green methods that utilize ... collected leaves are washed with distilled **water**, sliced into small pieces and boiled in distilled **water** to obtained extract. The extract can ...
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... The chemical and biological processes in TPA can produce leachates which can contaminate the surface and ground **water**. Not yet to ... **Sustainable** development is the development which meets the current needs without sacrificing the ability of future generations to meet

5

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[PDF] Increasing ecoliteracy on the impact of organic waste management using a problem a problem-solving the model [PDF] esaunggul.ac.id
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... Teacher Study Program students at the **Universitas Esa Unggul** towards the impact of organic **waste** management using a problem solving ... be preserved with all its complex characteristics, and establish a **sustainable** community that values the intrinsic values of the universe. ...
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B Kinantan, AR Matondang... - IOP Conference Series ..., 2018 - iopscience.iop.org
... the basis of systematic and **sustainable** of **waste** management, expects the **waste** management system will no longer apply the end of pipe system, but the process of **waste** management starts from the source level by reducing and managing the **waste** in an integrated way prior ...
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[PDF] Community Led Total Sanitation (CLTS) in Cikupa Village and Teluknaga Village in Tangerang, Indonesia [PDF] researchgate.net
DA Kusumaninggar, G Vianita - SCOPUS IUPHRD CITATION ..., 2019 - researchgate.net
... and implement government commitments to improve access of drinking water and basic sanitation **sustainably** to achieve SDGs (3). ... This study stated that "Every liquid **waste**, especially from hospitals, clinics, industries and any other hazardous liquid **waste** must be collected, ...
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... Under this theme, we will explore **sustainable** innovation in industrial technology, information, and management of global issues. The articles cover a broad spectrum of topics in Industrial Engineering and Management, namely Quality Engineering & Management (QM), ...
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H.Syofyan, R.Susanto, O.F.Nugroho. - Jurnal Pendidikan ..., 2020 - journal.unj.ac.id
... Attention to environmental **sustainability** must be increased from various aspects, one of which is in the field of education to guide students. Subjek dari penelitian ini merupakan mahasiswa Pendidikan Guru Sekolah Dasar Universitas Esa Unggul Jakarta. Metode penelitian ...
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Y.Amelia - 2018 - repository.lppm.unila.ac.id
... Solo, Indonesia and now 2018; we meet again in Indonesia to share new experiences and knowledge on governance and **sustainability**. ... identify best practices that will contribute to **sustainable** development. This global sharing of best practices in the area of governance and ...
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... government commitments to improve access of drinking water and basic sanitation **sustainably** to achieve SDGs. Sanitation efforts based on Permenkes No. 3... Domestic liquid **waste** must be disposed properly following to appropriate standards of **waste** disposal. Domestic liquid ...
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R.Vasu - 2018 - scholar.unand.ac.id
... Result of relationship between a knowledge level towards the **waste** management action was $p = 0,010$ and result of relationship between the respondents attitude and their **waste** management action was $p = 0,008$. Conclusion : There is a relationship between knowledge and ...
☆

[PDF] The Implication of Green Marketing that Influence the Customer Awareness [PDF] mercubuana.ac.id

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7

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SPD.Anantadajava, MS.Rahmadani, S.Zen. ... & Universitas Esa ..., 2019 - papers.ssrn.com
... Effects of the respective issues may result in natural **climate changes** to extreme **climate** events. Though the issues can be seen as ... This is because wastewater can be seen and considered as an alternative cost-efficient and **sustainable** source of energy due to the nutrients, ...
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... Community awareness and participatory engagement in environmental protection, **sustainable** livelihood and **climate change** adaptation: ... between **sustainable** fisheries and tourism to **sustainable** livelihood in Taka Bonerate - Kepulauan Selayar biosphere reserve. ...
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... The result of this balance is the achievement of environmental function **sustainability** [1] ... **Changes** in land use are also influenced by population and **climate change** that shape ... Thanks to **Esa Unggul** University for their assistance and support in terms of resource tools ...
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... Catholic University of Indonesia, **Universitas** Trisakti, **Universitas Esa Unggul**, **Universitas** Al-Azhar Indonesia, **Universitas** Tarumanagara. ... Under this theme, we will explore **sustainable** innovation in industrial technology, information, and management of global issues. The ...
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 ... This study aimed to understand the development surrounding Jakarta - Bogor inter-urban transportation railway station Cilebut Station located in Sukaraja District. Correlation between passengers and population is 0.99 that shows great impacts to development area ...
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 ... Pulau Pramuka juga menjadi tempat transit bagi wisatawan yang ingin berkunjung ke pulau wisata lainnya di sekitar Pulau Pramuka ... group discussion mulai dilakukan pada 27 - 28 April 2018 dilakukan oleh tim Dosen Universitas Esa Unggul untuk melihat langsung lokasi ...
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 ... costs, terminal capacity, terminal environment security, destination and direction of travel, availability of number and type of transportation fleet, traffic flow density and convenience of the terminal environment. The influence indicator which has a significant weight in influencing ...
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 ... how to optimize the garbage collection and transport sub-systems by finding the shortest route of transportation to the landfill by developing a ... Sustainable development is the development which meets the current needs without sacrificing the ability of future generations to meet ...
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 ... how to optimize the garbage collection and transport sub-systems by finding the shortest route of transportation to the landfill by developing a ... Sustainable development is the development which meets the current needs without sacrificing the ability of future generations to meet ...
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10

Example of Publication Related To Sustainability (Esa Unggul University , Indonesia)

Description:

Esa Unggul University supports research to analyze the causes of problems related to sustainability and the environment to achieve sustainable development goals (SGS). Lecturers and students then publish the results of these activities. They published their articles in international journals, accredited national journals, and

unaccredited national journals. In addition, they attend conferences, present orally or through posters. Details of publications during the 2018-2020 academic year include:

2018/2019 : 81 publications

2019/2020 : 78 publications

2020/2021 : 119 publications

Number of scholarly publications on sustainability annually over the last 3 years : 278 publications

In addition, lecturers also participated in the call for paper activities. The number of activities attended in 2018/2019 was four international conferences; in 2019/2020, there were 17 international conferences and seven national conferences, and in 2020/2021, there were ten international conferences and 13 national conferences.

Additional evidence link (i.e., for videos, more images, or other files that are not included in this file):

Publikasi jurnal :

<https://drive.google.com/drive/folders/1018Jlc3bW5UWC4II6F3OW1mlfeYwyFTY?usp=sharing>

Number of Events Related to Sustainability

	
<p>1</p>	<p>2</p>
	
<p>3</p>	<p>4</p>



5



6

Examples of Events Related to Sustainability (Esa Unggul University, Indonesia)

Description:

The following is the number of activities related to the environment and sustainability organized by Esa Unggul University in 2018-2020

2018: 73 events

2019: 71 events

2020: 66 events

A total average per annum over the last 3 years of **70 events** (e.g. conferences, workshops, awareness raising, practical training, etc.).

Additional evidence link (i.e., for videos, more images, or other files that are not included in this file):

2018 :

<https://docs.google.com/document/d/1WX1XkoOSWAM6nluevd1CVZeRTXTmyBxG/edit?usp=sharing&oid=113355796815171952876&rtpof=true&sd=true>

2019 :

https://docs.google.com/document/d/1ewjAecfkijd4whQUVu2iEzctFNj1l_Tu/edit?usp=sharing&oid=113355796815171952876&rtpof=true&sd=true

2020 :

<https://docs.google.com/document/d/11XfTXQ7BJhFc1U2O4fkZjPuhLBA3d3w/edit?usp=sharing&oid=113355796815171952876&rtpof=true&sd=true>

Number of student organizations related to sustainability

<p>Nature Lover Student Association</p> 	<p>Nature Lover Student Association is an organization that focuses on devoting itself and developing knowledge based on university values in the fields of education, research, and community and environmental service.</p>
<p>Indonesian Red Cross Volunteer Corps-Esa Unggul University</p>	<p>Indonesian Red Cross Volunteer Corps-Esa Unggul University is domiciled in West Jakarta under the guidance of the Indonesian Red Cross in West Jakarta City. It is under the patronage of the Chairperson of the Indonesian Red Cross Board of West Jakarta City and the Chancellor of Esa Unggul University. As well as being in the construction of Ka. Sie HR Volunteer PMI West Jakarta City</p>
<p>The Ministry of Social and Environmental Affairs (BEMU)</p>	<p>The Ministry of Social and Environmental Affairs is a division under the Student Executive Board of Esa Unggul University. The Ministry of Social and Environment functions to organize and oversee social and environmental affairs. Their programs, including a) Webinars with the theme of Growing Hydroponics b) Webinars with the theme of Mental Health c) Implementing Non-Plastic Usage in Campus Area d) Making a Flower Corner at One Point of the Campus e) Social Service</p>
<p>The Ministry of Arts and Culture (BEMU)</p>	<p>The Ministry of Arts and Culture functions as a means and forum for developing interests, talents, and potentials related to arts and culture.</p>
<p>The Ministry of Independence and Entrepreneurship (BEMU)</p>	<p>The Ministry of Independence and Entrepreneurship (Kemenkwu) is a creative and innovative ability that is used as the basis, and a resource for seeking opportunities for success. The Ministry of Independence and Entrepreneurship also functions as a means and a forum for developing interests, talents, and potential in the field of entrepreneurship or as a forum for student aspirations in doing business/entrepreneurship to develop their business. Their programs including training workshops on entrepreneurship, Success Motivation Podcasts and holding Cooperatives</p>
<p>UKM Traditional Dance</p>	<p>UKM Tatra was formed by the Department of Arts and Culture of the UEU BEM in collaboration with students from the physiotherapy faculty and has been active since March 21, 2015 until now.</p>
<p>Major student association</p>	<p>Major Student Association is a student organization at the department or study program level that are like extracurricular activities. Here, students are also forged mental and leadership, and invite them to apply their knowledge to achieve sustainable development goals</p>

Description:

Nature Lover Student Association

On August 14-15 2021, the Nature Lovers Student Association (HIMPALA) of Esa Unggul University (UEU) held a community service activity at the Taqlimul Qur'an Islamic boarding school in Muara 1 Village, Cibunian Village, Bogor. The theme of this activity, Jodi continued, is "Love of Nature and Compassion for Others." On this occasion, HIMPALA provided assistance in the form of stationery,

Al-Qur'an, basic necessities, goldfish seeds and compensation for orphans. (Link : <https://www.esaunggul.ac.id/meriahkan-hut-ri-ke-76-himpala-ueu-gelar-pengabdian-masyarakat/>)



Foto group Indonesian Red Cross Volunteer Corps-Esa Unggul University

Webinar

UEU PSR held a Webinar with the theme: "Community Perspectives on Stress and Prevention Efforts in Managing Stress" on November 1, 2021, at 13.00 WIB – finished via Zoom Meeting. This activity aims to help people manage the stress they face, especially during the COVID-19 pandemic. (Link : https://www.instagram.com/p/CH1OnQgA26T/?utm_source=ig_web_copy_link). In addition, the UEU PSR also held a webinar on blood donation, with the theme Dare to Donate Blood in a Pandemic Period held on January 24, 2021. This activity aims to motivate participants to donate blood to help people in need during a pandemic. (Link : https://www.instagram.com/p/CKLTHZWA3Uf/?utm_source=ig_web_copy_link)





Webinar "Berani Dondar Dimasa Pandemi"

@ksresaunggul | ksr.pmiueu@gmail.com | 085156548469

Evacuation of the Sriwijaya Airplane crash

















Members of the KSR PMI Unit of the Esa Unggul University took part in the task and participated in the evacuation process of the Sriwijaya Air SJ 182 crash on January 10 and 12, 2021. KSR as a humanitarian volunteer, was also present as a medical team and coordinated with other related parties

as part of the implementation of humanitarian duty. (Link : https://www.instagram.com/p/CKEZ2b-A9T-/?utm_source=ig_web_copy_link)

<p>KSR PMI   </p> <p>Unit Universitas Esa Unggul</p>  <p>11-14. 11. 2020</p> <p><i>Evakuasi Jatuhnya Pesawat Sriwijaya Air SJ 182</i></p> <p>  @ksresaunggul  ksr.pmiueu@gmail.com  085156548469</p>	<p>KSR PMI   </p> <p>Unit Universitas Esa Unggul</p>  <p>11-14. 11. 2020</p> <p><i>Evakuasi Jatuhnya Pesawat Sriwijaya Air SJ 182</i></p> <p>  @ksresaunggul  ksr.pmiueu@gmail.com  085156548469</p>
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Tanggap Darurat Banjir

Members of the KSR PMI Unit of Esa Unggul University participated in the Flood Disaster Emergency Response in the West Jakarta area. (Link : https://www.instagram.com/p/CLq1UalA7Ps/?utm_source=ig_web_copy_link)

<p>KSR PMI   </p> <p>Unit Universitas Esa Unggul</p>  <p>24. 02. 2021</p> <p><i>Tanggap Darurat Banjir</i></p> <p>  @ksresaunggul  ksr.pmiueu@gmail.com  085156548469</p>	<p>KSR PMI   </p> <p>Unit Universitas Esa Unggul</p>  <p>24. 02. 2021</p> <p><i>Tanggap Darurat Banjir</i></p> <p>  @ksresaunggul  ksr.pmiueu@gmail.com  085156548469</p>
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Fire Emergency Response in Tanjung Duren

On April 18, 2021, the KSR PMI Unit of the Esa Unggul University contributed to the West Jakarta City PMI in the Emergency Response to Fire Disasters. (Link : https://www.instagram.com/p/COFJ015AjqG/?utm_source=ig_web_copy_link)

KSR PMI



Unit Universitas Esa Unggul



18.4.2021

Tanggap Darurat Bencana Kebakaran



@ksresaunggul

✉ ksr.pmiueu@gmail.com
☎ 085156548469

KSR PMI



Unit Universitas Esa Unggul



18.4.2021

Tanggap Darurat Bencana Kebakaran



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☎ 085156548469

Community Service

On April 30, 2021, the KSR PMI Unit of Esa Unggul University has carried out Community Service on Education on Clean and Healthy Lifestyles and the delivery of hand washing tools and disinfectant equipment.

KSR PMI



Unit Universitas Esa Unggul



30.4.2021

Pengabdian Masyarakat KSR PMI Unit Universitas Esa Unggul



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KSR PMI



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UEU's KSR Community Service

The Ministry of Social and Environmental Affairs

Social Service Caring for the Cibunian Flash Flood. (<https://bem.esaunggul.ac.id/posts/bakti-sosial-peduli-banjir-bandang-cibunian>)



The Ministry of Arts and Culture

The program of the ministry of arts and culture includes art bulletins, organizing art parties, making Bini BEMU events (UUU BEM Art Talks)

Art Bulletin: Reog Ponorogo Dance
(<https://bem.esaunggul.ac.id/posts/buletin-seni-tari-reog-ponorogo>)

The screenshot shows a web browser displaying a press release from BEM Universitas Esa Unggul. The article is dated Wednesday, 30 December 2020. The main image shows a person in a large, ornate lion mask (Reog) on a basketball court. The text below the image reads: "Reog adalah salah satu kesenian budaya yang berasal dari Jawa Timur". The browser's address bar shows the URL: bem.esaunggul.ac.id/posts/buletin-seni-tari-reog-ponorogo.

Art Bulletin: Noken, a Knitting Bag from Papua Recognized by Unesco
(<https://bem.esaunggul.ac.id/posts/buletin-seni-noken-tas-rajut-dari-papua-yang-diakui-unesco>)

The screenshot shows a web browser displaying a press release from BEM Universitas Esa Unggul. The article is dated 4 Desember 2020. The main image shows several colorful, knitted bags (Noken) hanging from a market stall. The text below the image reads: "Bahkan noken ditetapkan sebagai warisan budaya tak benda dari UNESCO pada, 4 Desember 2012 lalu. Noken digolongkan dalam". The browser's address bar shows the URL: bem.esaunggul.ac.id/posts/buletin-seni-noken-tas-rajut-dari-papua-yang-diakui-unesco.


Sustainability Report

Greenmetric Report

2020

[1] Setting and Infrastructure (50)

[1.9] Total Area on Campus Covered in Forest Vegetation (meter²)



Description:
 Total area: 40,497 m² (40% Of total area)
 Total distance/circumference: 4.84 km

5. RESULTS DETAIL

Setting and Infrastructure

Indicator	Score
SI.1 The ratio of open space area towards total area	75
SI.2 Area on campus covered in forest	0
SI.3 Area on campus covered in planted vegetation	100
SI.4 Area on campus for water absorbance	80
SI.5 The ratio of open space area avoided campus population	225
SI.6 University budget for sustainability effort	100

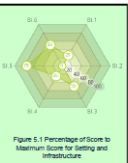


Figure 5.1 Percentage of Score to Maximum Score for Setting and Infrastructure

Energy and Climate Change

Indicator	Score
EC.1 Energy efficient appliances usage	100
EC.2 Smart building program implementation	100
EC.3 Number of renewable energy source in campus	75
EC.4 The total electricity usage avoided by total campus population	75
EC.5 The ratio of renewable energy production towards total energy usage per year	80
EC.6 Element of green building implementation	75
EC.7 Greenhouse gas emission reduction program	80
EC.8 The ratio of total carbon footprint divided campus population	75

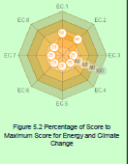


Figure 5.2 Percentage of Score to Maximum Score for Energy and Climate Change

Examples of sustainability report (Esa Unggul University, Indonesia)

Description:

Complete text of Esa Unggul Sustainability Report 2020 available on this link:

<https://greencampus.esaunggul.ac.id/>

https://drive.google.com/file/d/1bQqUnam0srZD1IGpS3w1nvW2ZKIW_88V/view?usp=sharing

Number of cultural activities on campus (e.g.Cultural Festival)
including virtual activities (if any)

International Language & Culture Festival

"Virtual Experience and Learning"

OCTOBER 2020

VIA ZOOM

Exploring France
with **DYAH FARIANI, MA**
- Teacher at Institut Français d'Indonésie.
- Interpreter and Translator, UNHCR Jakarta.
17 & 31 October 2020
10 - 11.30 AM

Exploring Korea
with **Bung Korea**
(Korean Youtuber)
Shim In Lye
(Founder & Teacher of Korean Hangari Club, Padjajaran University)
23 & 28 October 2020
10 - 11.30 AM

English Conversation
with **Christopher Sherrill**
(Student Volunteer)
20 & 22 October 2020 (For students)
27 & 29 October 2020 (For lecturers)
9 - 10.30 AM

Moderator:
Margaret Sinta UH
(Chairman of Korean Hangari Club-Indonesia)

Host/MC:
Rosalina Nugraheni W.P
(Head of French Section of Indonesian Language)

Registration:
<https://seminar-web.esaunggul.ac.id>
FREE !!!

**International Language and Culture Festival 2020
(Esa Unggul University, Indonesia)**

Zoom Meeting

Recording...

Fariani

Heni Pusat Baha...

Wulandari Muh...

Anggitha Githa

Natasya Alma

Liza Sj

Marentino Koer...

Monica D

Gilang Nur Bikh...

Arlina Lolita

Hasanudin

Shania Wijaya

Anggun Trianita...

Uswatun Hasan...

Andi Putri Sintia

Chairunisa Trian...

Iven Fesky

Sadaharu

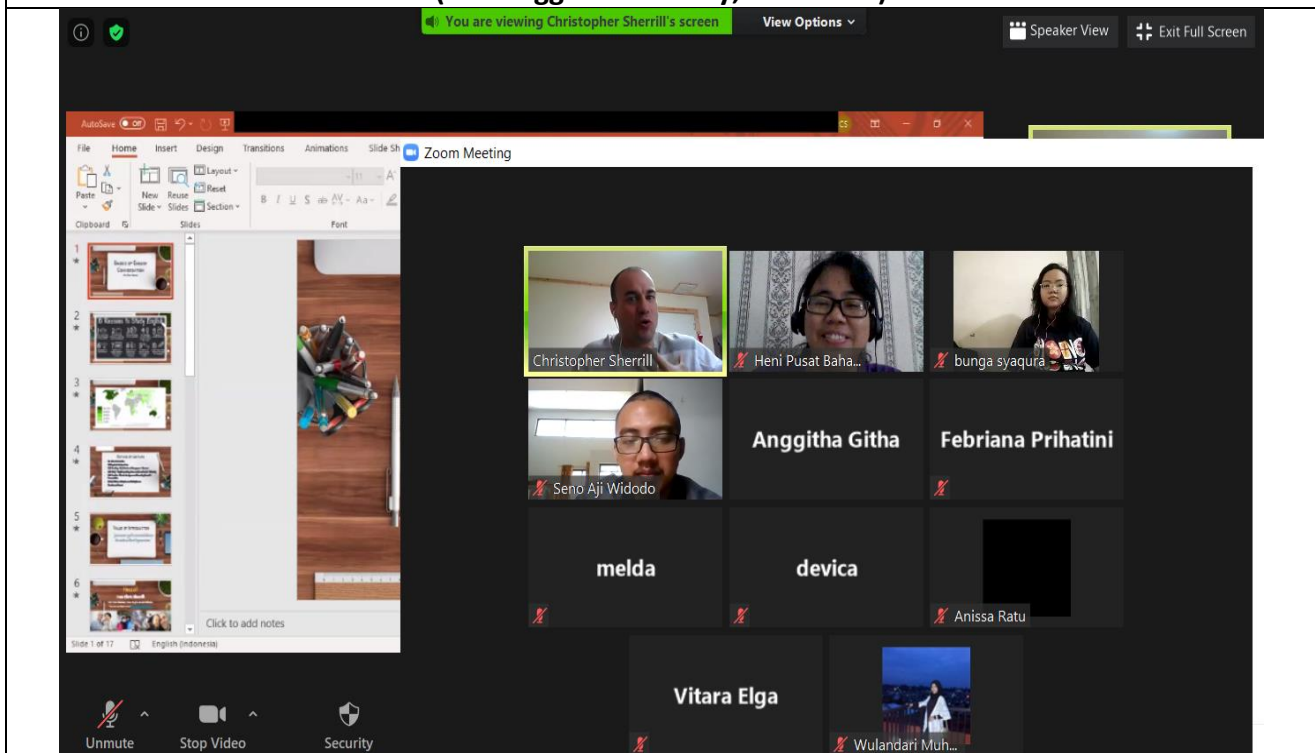
Bela Fadila

10:12 AM
10/17/2020

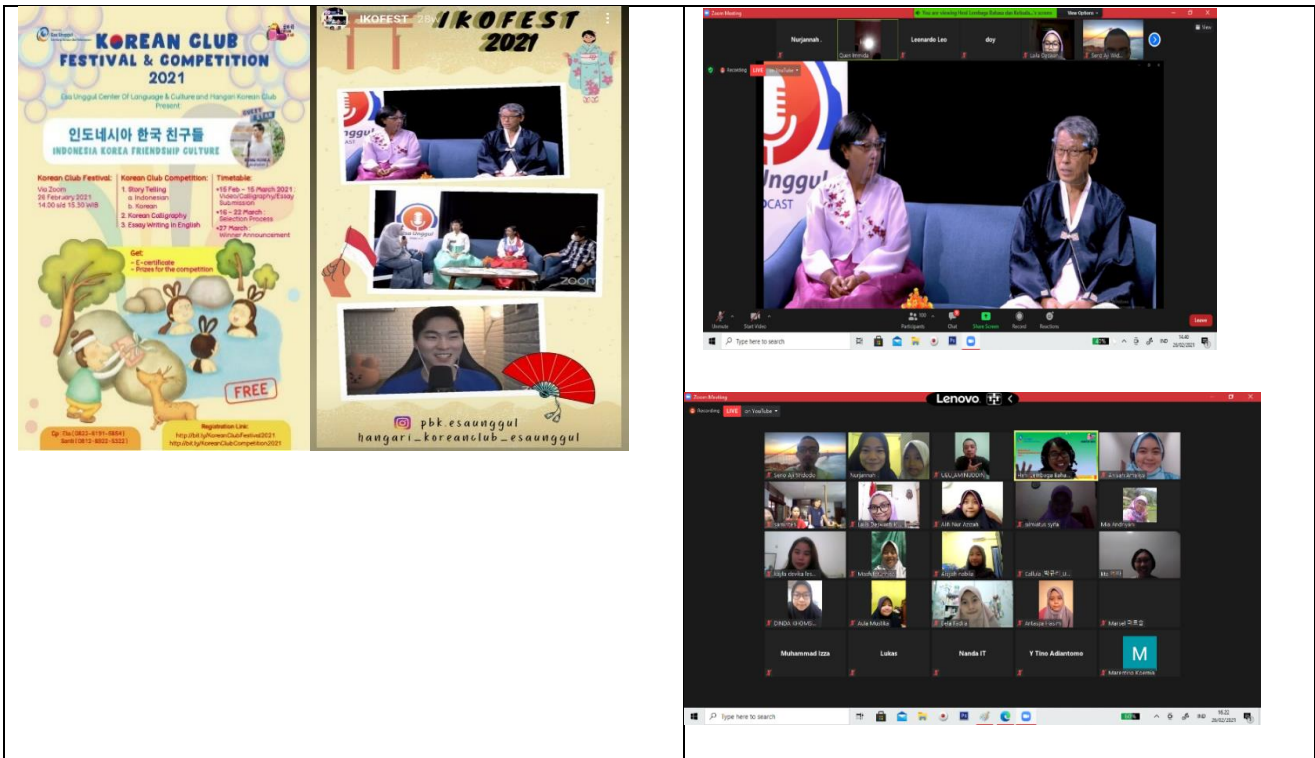
**Exploring France: Language and Culture with France Cultural Center
(Esa Unggul University, Indonesia)**



**Exploring Korea with Bung Korea (Korean YouTuber)
(Esa Unggul University, Indonesia)**



**English Conversation with Chris Sherrill (USA)
(Esa Unggul University, Indonesia)**



IKOFEST 2021 (Esa Unggul University, Indonesia)



Cultural Activites (Esa Unggul University, Indonesia)

Description:

Total number of cultural activities on campus organized by the University: 6 events

Link Youtube :

[Podcast Esa Unggul Talk #29: : IKOFEST 2021 Annyeong Haseyo - YouTube](#)

[Podcast Esa Unggul Talk #29: IKOFEST 2021 Annyeong Haseyo \(Part 2\) - YouTube](#)

[Korean Club competition 2021 - YouTube](#)

Number of university program(s) to cope with Covid-19 pandemic

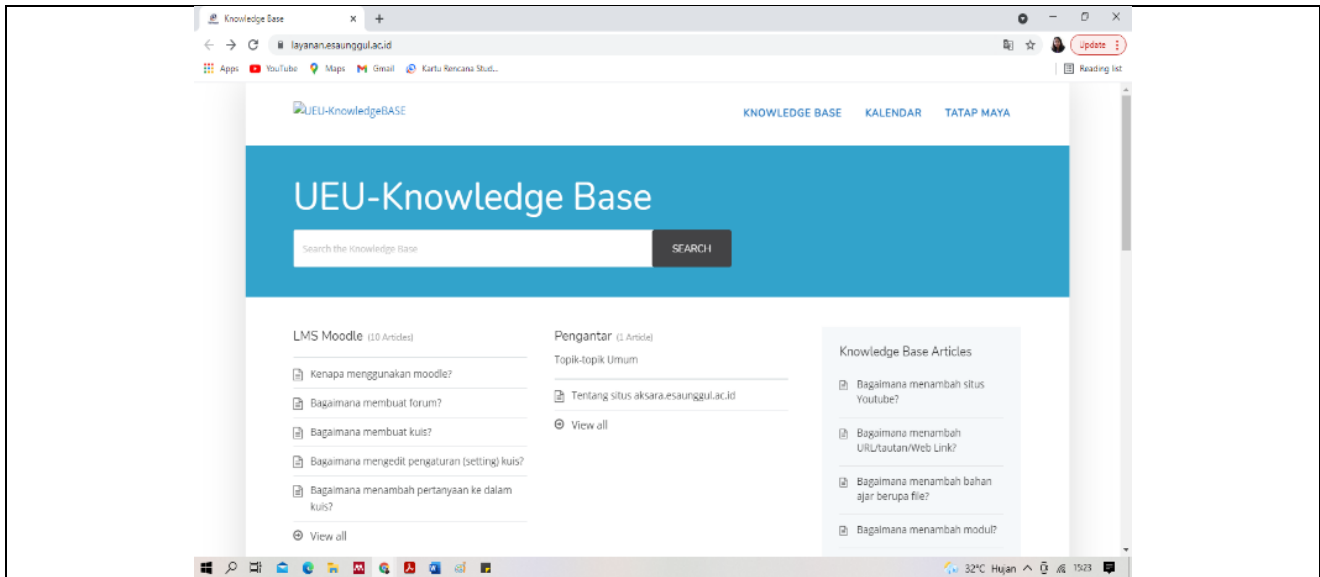


Figure 1. Knowledge Base E-Learning (Esa Unggul University, Indonesia)

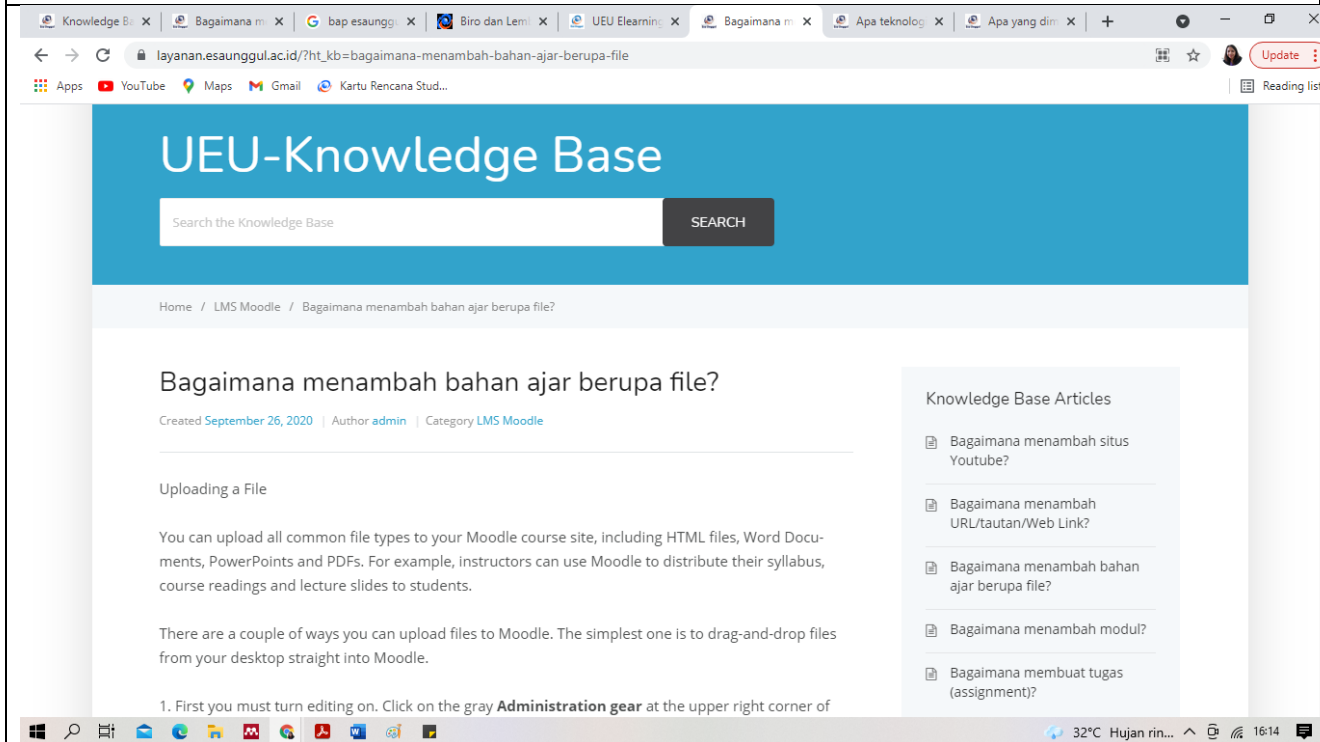


Figure 2. Upload teaching materials on E-Learning (Esa Unggul University, Indonesia)

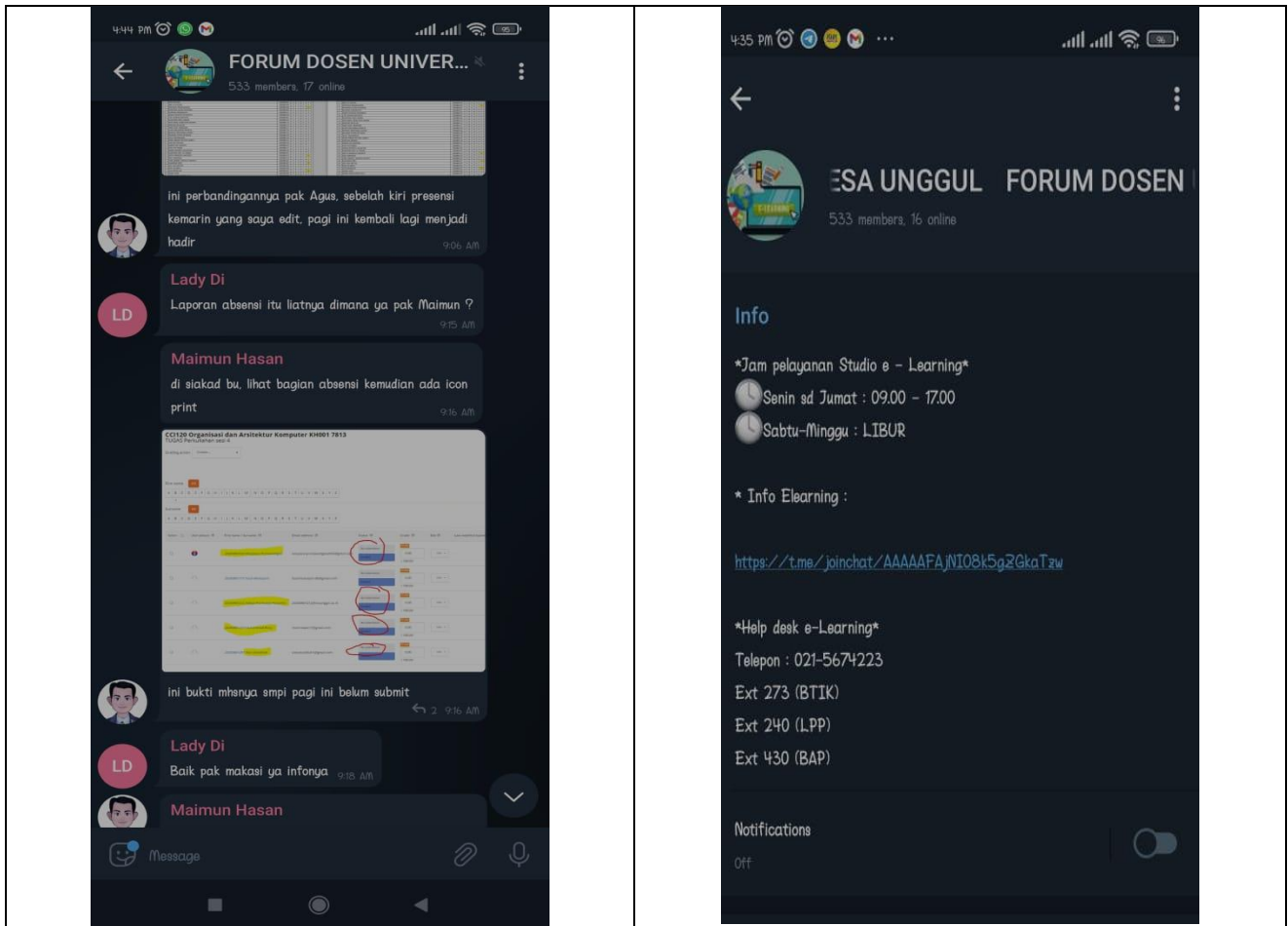


Figure 3. Helpdesk Siakad dan E-Learning (Esa Unggul University, Indonesia)

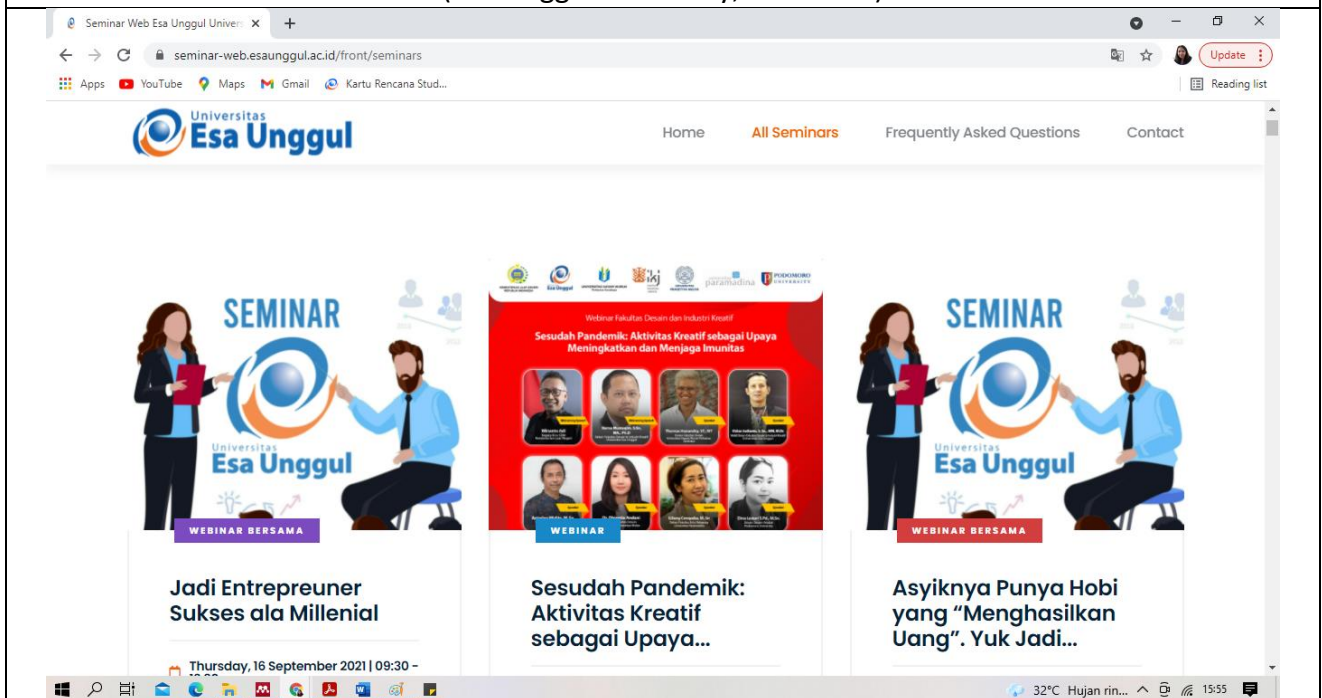


Figure 4 . Video Conference (Esa Unggul University, Indonesia)



Figure 5. Vaccination Program
(Esa Unggul University, Indonesia)

Description:

Helpdesk group for E-Learning

Since the COVID-19 pandemic, the learning system implemented at Esa Unggul University is entirely through e-learning. It is intended so that students can still get a good education even though they have to study from home and graduate on time with qualified knowledge and skills by the vision of the Esa Unggul University, which is to produce a profile of graduates who are intellectual, creative and entrepreneurial. However, some lecturers and students are not ready for distance learning. They are unfamiliar with or unfamiliar with e-learning platforms or software. Therefore, the Esa Unggul University Learning Development Institute and Esa Unggul University IT strive to meet the needs of lecturers and students, such as providing tutorials or guides (as shown in Figure 1). Raw learning materials are added to the lecturer's academic system (Siakad). After being uploaded by the lecturer, the Bureau of Information and Communication Technology (BTIK) of Esa Unggul University will periodically update. However, enriching learning resources can be added directly to their respective online classes through the eLearning system (moodle). The helpdesk page also guides doing learning modules (figure 2), learning videos, discussion forums both synchronously and asynchronously, uploading modules, assignments, quizzes and journal links to support learning. During synchronous learning, lecturers and students are facilitated using Google Meet with premium features (capacity of 100 participants) and zoom meetings (capacity of 100, 500 and 1000), which are managed by BTIK and the Learning Administration Bureau (BAP) of Esa Unggul University so that distance lectures are carried out well. Also, with IT, in assisting the synchronization of learning materials in the academic system to e-learning and vice versa in helping to synchronize the assessment of assignments, quizzes and midterm and end-semester exam scores to the academic system of lecturers and students. So far, the helpdesk related to learning, lecturers and students can contact the LPP, BAP and BTIK extension numbers at Esa Unggul University. In addition, they also provide services through the telegram social media group (Figure 3), making it easier for lecturers to communicate about the academic system and e-learning system.

Online Teaching

(<https://elearning.esaunggul.ac.id/>)

Regarding the Covid-19 Pandemic, the UEU Chancellor mandated that teaching and learning activities at UEU be carried out virtually starting from the even semester of 2019/2020 until the current academic year 2021/2022. This website contains operating manuals and related information (figure 3). This page will be

updated regularly. The output of e-learning is achieved. This can be seen from the evaluation results of lecturers in the teaching and learning process conducted by the Quality Assurance Committee of Esa Unggul University. Evaluation questions include how the lecturer's teaching materials are complete (slides, modules, journals, etc.), the ability of the lecturers to increase student interest in learning during e-learning, communication between lecturers and students, both at the initial meeting explaining the learning system and lecture references, even through discussion forums and lectures. The ability of lecturers in using learning media.

Addition bandwidth

In addition to making guidelines for implementing distance learning for lecturers and students, for the sake of smooth teaching and learning activities, BTIK Esa Unggul University added an external cloud server with a larger bandwidth capacity.

Video Conference

Since the pandemic, UEU has continued to carry out seminars, or so far known as webinars, training, workshops, and others (Figure 4). BTIK UEU provides adequate internet facilities. Since the pandemic, BTIK has added an external cloud server with a larger bandwidth capacity. BTIK also provides Google Meet and Zoom Meeting facilities to support the implementation of webinars, training and workshops conducted by faculties, study programs, units at UEU and even student activities that require these facilities. Of course, before using Google Meet or Zoom Meeting, both lecturers, education staff, and students apply for permission to use them to avoid clashes between activities.

Vaccination Program

In addition to the four activities above, Esa Unggul University also carries out a vaccination program for education staff and students. It aimed to reduce the rate of the spread of the COVID-19 virus, which is getting higher. The vaccination program for education personnel in phase I was carried out on September 25, 2021, while phase II was on August 25-26 2021, using the AstraZeneca vaccine, with 955 people being vaccinated. The vaccination program for students, phase I, will be held on 22-23 July 2021, with 796 students being vaccinated (Sinovac vaccine). The implementation of this program involves students from the Faculty of Health Sciences (FIKES) and is assisted by health workers. This output was achieved, especially at Esa Unggul University, the number of cases of tendonitis exposed to COVID-19 was relatively low.

Additional evidence link (e.g. for videos, more images, or other files that are not included in this file):

Online Output : https://docs.google.com/spreadsheets/d/1rxZnKTE9Aoc87YYt_lvw-B36Ka0J14-S/edit?usp=sharing&oid=113355796815171952876&rtpof=true&sd=true

Vaccination Program : [Universitas Esa Unggul Jadi Sentra Vaksinasi Tenaga Kependidikan LLDIKTI | Fakultas Ilmu Kesehatan](#)


Number of sustainability community services project organised and/or involving students

Project name	Participants	Project duration	Project area
Healthy Environment Response Movement as an Effort to Control Infectious Diseases	26	1 year	ED
Community empowerment in managing used cooking oil	22	1 year	WS
Volunteers in Handling COVID 19 Patients at RSUD dr. Chasbullah Abdulmajid Bekasi City		1 month	ED
Volunteer in UEU's Education Personnel Vaccination Program	955	6 month	SI
Volunteer in UEU's Student Vaccination Program	796	6 month	SI
Community Empowerment in the Application of Balanced and Safe Nutrition to Maintain Body Endurance	26	1 year	ED
Cultivating Reading Habits in Children	650	1 year	ED
Vaccination Event At Cengkareng Puskesmas March 22-31, 2021	400-500	10 days	SI

Description:

Esa Unggul supports sustainability programs through community service in ED, WS and SI

Number of sustainability-related startups

No.	Information
1	<p>Nama Start Up : UMKM Berseri (industry rumahan pembersih/ecozyme) *</p> <p>Startup area in UI Greenmetric questionnaire (SI, EC, WS, WR, TR, ED): SI</p> <p>URL: *</p> <p>Description : UMKM BERSERI (Bersih, Sehat, Lestari) a startup engaged in going green sociopreneur, where in its operations, the team hopes to create a positive impact on the business on society and environment. We criticize the waste problem in Indonesia, especially in our immediate environment. The idea was born to establish BERSERI UMKM in April 2019, hoping it could be an alternative solution to the existing problems. BERSERI MSMEs in their business activities are producing eco enzyme, the result of fermented fruit peel waste that can be used as a versatile household cleaner. Eco enzyme in the fermentation process will produce acetic acid and alcohol compounds as antiseptic and antibacterial substances, making it practical for killing germs and cleaning household furniture. The eco enzymes that we produce Ecozyme, produced from natural ingredients, without chemicals, of course, are environmentally friendly because they do not produce chemical waste. BERSERI MSMEs that have just been independently initiated require capital injections to build and develop businesses to run operations sustainably. It started in April 2019 with a turnover of Rp. 12,464,500,- and a profit of Rp. 2,088,020 with a workforce of 4 people.</p> <p>Documentation :</p> 
2	<p>Nama Start Up : Wedding Organizer & Catering Service *</p> <p>Startup area in UI Greenmetric questionnaire (SI, EC, WS, WR, TR, ED): SI</p> <p>URL: *</p> <p>Description :</p>

Wedding Organizer is a special service that helps the bride and groom and their families plan and supervise the implementation of a series of wedding events according to a predetermined schedule. The wedding organizer also manages wedding events from marriage contracts, traditional ceremonies, aisles, catering, bridal makeup, documentation, etc. In 2006, I formed a Wedding Organizer, which developed this business from my mother's business, namely a beauty salon. I got a lot of valuable lessons about developing this business. Sales turnover/month is Rp. 2,483,000, 25% profit/month with 6 members/workers



3	<p>Nama Start Up : Donsi (Donat Isi) Kelor *</p> <p>Startup area in UI Greenmetric questionnaire (SI, EC, WS, WR, TR, ED): SI</p> <p>URL: *</p> <p>Description : Moringa doughnuts (stuffed doughnuts) are the brand of our business, food made because they were inspired when reading an article about the benefits of Moringa leaves. Moringa doughnut has the main ingredient that characterizes our products, namely Moringa flour. Moringa flour originally came from dried Moringa leaves that we got from Moringa farmers. The good nutritional content of Moringa flour, as one of the essential ingredients of our business, is expected to foster public interest in consuming this because it is guaranteed to be safe and halal. Business development by making various cakes such as risol, pastel, putu ayu, various cookies. With a variety of flavours, this makes people love this food. Moringa donation products are in demand by people of various ages ranging from children, adolescents and adults. The need for filled doughnuts is around 200 - 300 pc per day; therefore, with many people's interest in consuming filled doughnuts, we can meet market needs by producing more than 200-250 pc per day. We introduce these processed Moringa doughnuts directly or through social media to know that this product is different from those on the market because it has good nutritional benefits for health. We carry out direct marketing activities by selling to consumers. There are also indirect marketing activities such as we entrust our products to travelling cake sellers, deposited in small shops and campus canteens. Our marketing activities are also carried out online through social media such as Instagram, Whatsapp, Facebook. We are also ready to accept orders for recitation events, weddings. We offer free shipping services only for the three closest sub-districts in the Tangerang Regency area; outside the three sub-districts will be subject to delivery services.</p> <p>Documentation :</p>
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<p>4</p>			<p>Nama Start Up : NiOnigiri *</p> <p>Startup area in UI Greenmetric questionnaire (SI, EC, WS, WR, TR, ED): SI</p> <p>URL: *</p> <p>Description : Food originating from Japan is identical to seafood products, one of which is fish; the way Japanese people eat fish is usually served raw, only washed, even the onigiri that Japanese people serve is raw. Unlike the Indonesian people, in Indonesia, most of the food served is boiled or fried first. Marketing is done using Twitter and Instagram @NiOnigiri social media accounts. Because NiOnigiri's online business, we rely on good product photos to share on our social media accounts. In August, our income was Rp. 1,910,000 with sales of 82 units. In the second month, which is September, our revenue was Rp. 4,929,000 with sales of 212 units. Then in the third month, in October, our income was Rp. 5,090,000 with sales of 226 units. In these three months, our business revenue growth has always increased every month, with average revenue growth of 86.2% per month.</p> <p>Documentation :</p>
<p>5</p>	<p>Nama Start Up : Si Kunel (Si Buku Flanel) *</p> <p>Startup area in UI Greenmetric questionnaire (SI, EC, WS, WR, TR, ED): SI</p> <p>URL: *</p> <p>Description : The business, named SiKuNel or Si Flannel Book, is engaged in the craft sector. It was made because I feel the lack of children's learning about reading and arithmetic before entering school and parents' confusion about engaging learning media to accelerate early childhood reading and counting skills. With the community's increasing needs, I took the initiative to create a learning media, namely in the form of a book creation that introduces an element of letters and numbers accompanied by the help of pictures. By using the primary material of colourful flannel, I am optimistic that this book has a multifunctional use, both as a means of playing for children due to the book's attractive shape and the media for children's</p>		

learning. I am sure children will enjoy learning to use SIKUNEL because of the many colours of flannel used to make this book so that children do not get bored quickly and are even more curious about the contents. In the SiKuNel production process, I recruited three employees. I served as the initial design maker and managed marketing; one employee served as a tailor in making the base of this flannel book, one employee was in charge of cutting and pasting materials on the base of the book according to a predetermined design. One employee doing finishing tasks, namely tidying up the details of SiKuNel so that it is ready to be sold to customers.

Documentation :



6 **Nama Start Up : Tempe Tipis Manis** *
Startup area in Ui Greenmetric questionnaire (SI, EC, WS, WR, TR, ED): SI
URL: *

Description : Tempe Tipis Manis Sweet Thin Tempe is the development of processed foods made from tempeh. Tempeh itself is a type of food that everyone has eaten. Not even a few of them always add tempeh as a side dish in their food. Tempeh that is usually found in the community is processed tempeh as usual. However, by looking at the huge market potential accompanied by tempeh fans who exist in all circles, creative ideas emerge to add to the collection of tempeh foods. By adding a sweet taste to tempeh, it is hoped that it will further increase the love for processed tempeh. This Sweet Thin Tempe has a crunchy, crispy, sweet and long-lasting taste texture. Because the manufacture of Sweet Thin Tempe uses halal ingredients and does not contain preservatives. For 1 pack of Sweet Thin Tempe itself is sold at a price of around Rp. 5,000,

-- Rp. 10,000 per pack. The weight of the packaging is 100g. Tempeh Thin Sweet packaging also uses a resealable zipper for carrying everywhere, even for giving gifts. The product is distributed by people of various ages ranging from children to adults, directly and indirectly to consumers. You can also do direct marketing activities such as we can access through social media such as Instagram, Facebook, and WhatsApp. We can also deposit them in the campus canteen. We can also access through social media such as tempetipismanis_ which all people can access.



7	<p>Nama Start Up : Teman Lapar *</p> <p>Startup area in UI Greenmetric questionnaire (SI, EC, WS, WR, TR, ED): SI</p> <p>URL: *</p> <p>Description : Teman Lapar is a type of culinary food where it sells food in the form of Rice and Chicken Fillet Flour with various choices of sauces and is served in a unique and practical box. This hungry friend provides box chicken with original sauce variants, mango sauce, and pineapple sauce. The price for each box of Teman Lapar is low, with a price range of 22 thousand to 25 thousand rupiahs. Not only selling food, but hungry friends also sell drinks such as fresh tea and lemon tea to complete the enjoyment of the hungry friend box. Of course, Teman Lapar has a different taste from other types of processed chicken where the raw materials and sweet and sour mango and pineapple sweet and sour sauces are unique and have not been widely used by food preparations in general.</p> <p>Documentation :</p> <div style="display: flex; justify-content: space-around;">   </div>
8	<p>Nama Start Up : LATIMAKASTURI (Lampu Tidur Aroma Terapi Kasturi) *</p> <p>Startup area in UI Greenmetric questionnaire (SI, EC, WS, WR, TR, ED): SI</p> <p>URL: *</p> <p>Description :</p> <p>This Kasturi Aromatherapy Sleep Lamp is a form of creativity that utilizes the primary material of parole pipe. As for the comparison of this product, what makes it different from other night lamps is that this night lamp has the addition of a musk-scented candle that can make the atmosphere of the room comfortable and fragrant. Of course, this is very useful for pampering our sleep at night because the aroma of musk produced gives a relaxed sensation while sleeping. Coupled with calligraphy decorations that read Ayat Kursi, which makes this sleeping lamp have a religious nuance. This night light is handy for those who do not like to sleep in dark or bright places because this night light emits a little light from the cracks of calligraphy writing so that the room is decorated with dim light.</p> <p>Documentation :</p>



9 **Nama Start Up : FA & YA Collection** *
Startup area in UI Greenmetric questionnaire (SI, EC, WS, WR, TR, ED): SI
URL: *

Description :

Our business is a Creative Industry because of various hand skills and high artistic values. We produce Swarovski Digital Tasbih products with diamonds, equipped with three buttons: a button to count, a button to turn on the lights, and a button to reset the count during dhikr. Our type of business is selling Swarovski Digital Prayer Beads.

Documentation :



10 **Nama Start Up : Tropical-19 Smoothies** *
Startup area in UI Greenmetric questionnaire (SI, EC, WS, WR, TR, ED): SI
URL: *

Description :

Tropical-19 Smoothies is a new business engaged in the beverage sector, which has a positive impact, especially during this pandemic. The pandemic period caused by the coronavirus in Indonesia does not seem to be over soon, where the positive cases of Covid-19 are still growing. With these conditions, maintaining health and increasing body immunity is a wise enough way to avoid contracting the Covid-19 virus. Based on the World Health Organization (WHO) recommendations, in addition to adequate food intake, the need for vitamins and minerals must also be met to help boost immunity. One of the vitamins that must be considered is vitamin C.

Tropical-19 Smoothies, in its manufacture, uses natural and selected citrus fruits combined with milk. The benefit of Tropical-19 Smoothies is that apart from quenching thirst, it contains Vitamin C from Sunkist oranges which function as an antioxidant. There are nata de coco, basil seeds and agar-agar in addition to this drink. Tropical-19 Smoothies that we produce in 250 ml packages for IDR 18,000 and 1 litre for IDR 60,000.

Documentation :



- 11 **Nama Start Up : Kedai Ala Japan**
Startup area in UI Greenmetric questionnaire (SI, EC, WS, WR, TR, ED): SI

Description :

Combining two cultural elements in a fusion food is now back into a culinary trend. The emergence of fusion food is inseparable from the role of the millennial generation, who likes to explore flavours. Junk food that people of all ages like turns out to contain a high number of calories. In just one meal, you can consume excessive salt, sugar, and fat. Even so, 89 per cent of those interviewed agreed that it is necessary to maintain good health to help reduce the incidence of various diseases.

Documentation :



- 12 **Nama Start Up : Yeyezkiya**
Startup area in UI Greenmetric questionnaire (SI, EC, WS, WR, TR, ED): SI

Description :

Yeyezkiya is a local brand that produces and sells women's clothing online. I started this business in May 2018. I chose this clothing line business because I have an interest in the fashion world, where when I was in high school, I managed to get second place for the Fashion Recycle competition at school. Clothing products that Yeyezkiya has successfully made are Gladys Blouse, X-Top, Kimmie Outer, Jenny Blouse, Chilla Shirt, and hijab Crinkle Shawl and Vocal Square in collaboration with celebgram Adya Asyra. All clothes are made in all sizes using convection vendors.

Documentation :



13 **Nama Start Up : BACARA**
Startup area in UI Greenmetric questionnaire (SI, EC, WS, WR, TR, ED): SI

Description :

Apa itu BACARA?

Bacara is a solution to help Deaf and Mute Friends communicate with people who do not understand sign language. UEU Informatics Engineering student Muhammad Rizky Perdana explained that the startup he and his Project Team developed from various universities in Indonesia was a Sign Language application called the Bacara (Speech Support) Application. Rizky continued that this application was used as a sign language learning platform and directly translated sign language into text and audio. Muhammad Rizky Perdana managed to get funds for a startup project initiated by the Ministry of Education and Culture through the 2021 Bangkit Program.



14 **Nama Start Up : SILC Lasik Center**
Startup area in UI Greenmetric questionnaire (SI, EC, WS, WR, TR, ED): SI

Description :

Utama Eye Clinic with the main service of LASIK surgery with advanced technology, experienced doctors and a comfortable place where the procedure aims to eliminate refractive errors such as myopia (eyes -), hypermetropia (eyes +) and Astigmatism (cylindrical eyes) " Doctor Sophia Pujiastuti, SpM(K), MM completed his Masters in Management from the Faculty of Economics, Esa Unggul University, Jakarta in 2017 with a thesis on a business plan for a lasik clinic, which he later applied to the clinic he founded in 2017.



15 **Nama Start Up : Oesodo alam mandiri**
Startup area in UI Greenmetric questionnaire (SI, EC, WS, WR, TR, ED): SI

Description :

a trusted and beneficial herbal medicine company for the community, to awaken a culture of liking to drink herbal medicine as an ancestral heritage, and to serve health culinary delights. To provide educational facilities for the community in improving health status. A herbal cafe partnership, the result of the BP MM final project at Esa Unggul University.

Documentation :



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Nama Start Up : Sayur Mandjur

Startup area in UI Greenmetric questionnaire (SI, EC, WS, WR, TR, ED): SI

Description :

Sayur Mandjur was founded in 2019 on behalf of individuals engaged in the provision of Hydroponic Vegetables. in running its business in collaboration with Farmers Groups, as well as Independent Farmers. They carry out intensive cultivation of hydroponic vegetable farming. Esa Unggul Nutrition Student Products.

Documentation :

