

# SUSTAINABILITY REPORT



# CONTENTS

- 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



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 covering 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.

## Campus Setting



### Description:

Esa Unggul is located in a urban area with 40 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 19.500 in population per km<sup>2</sup>

### Additional evidence link:

[www.esaunggul.ac.id](http://www.esaunggul.ac.id)



**Description:**

Esa Unggul Bekasi is located in a residential city area with a forest cover area of 50 percent. The campus is still in the final stages of tidying up, which uses a smart building system.

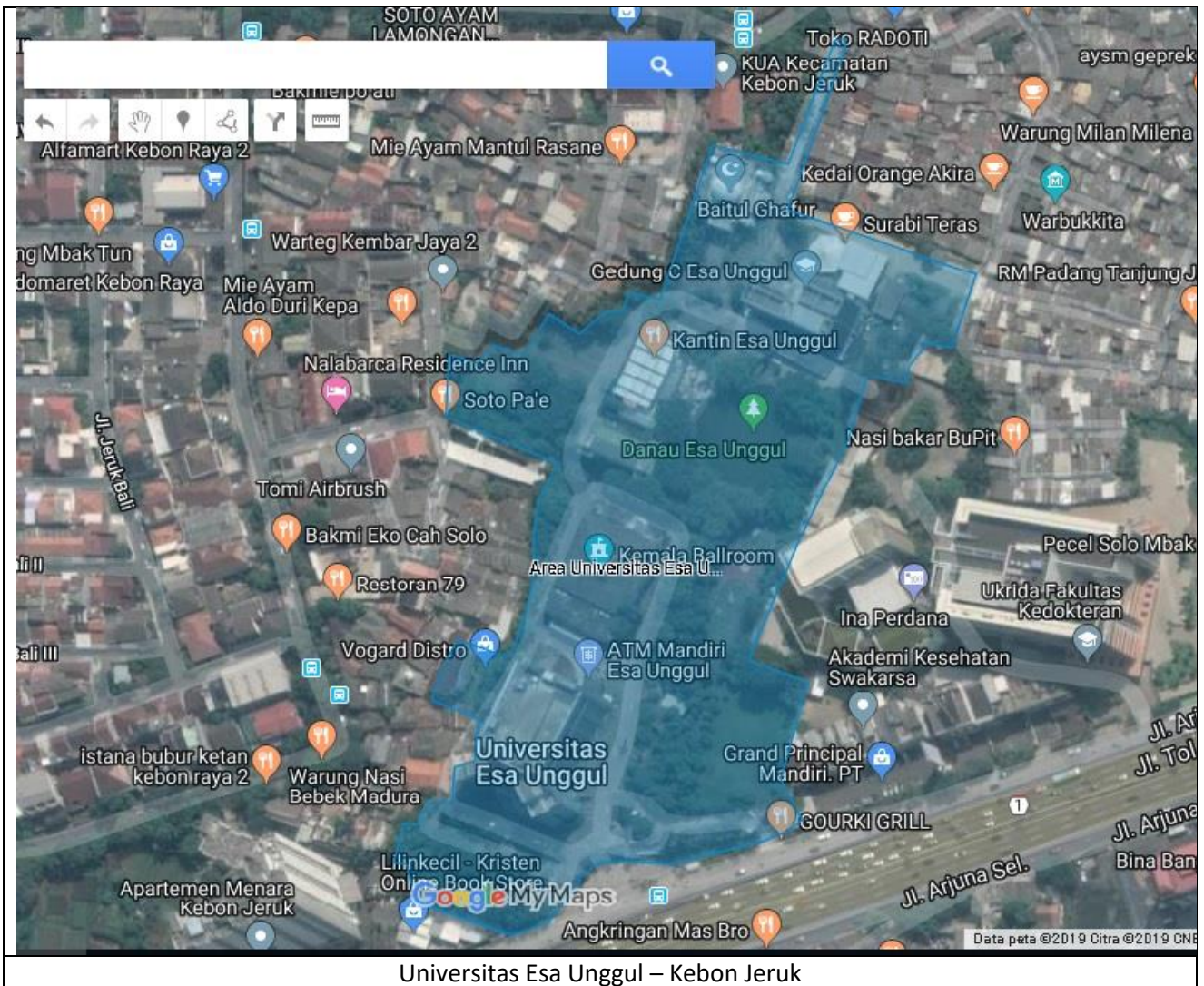
Esa Unggul is located in Bekasi - West Java. The address of esa unggul is Jl. Harapan Indah Boulevard No. 2, Pusaka Rakyat, Kec. Tarumajaya, Bekasi, West Java 17214 this mean high population density of 1.500 in population per km<sup>2</sup>

**Additional evidence link:**

[www.esaunggul.ac.id](http://www.esaunggul.ac.id)



## Total Campus Area (meter<sup>2</sup>)



### Description:

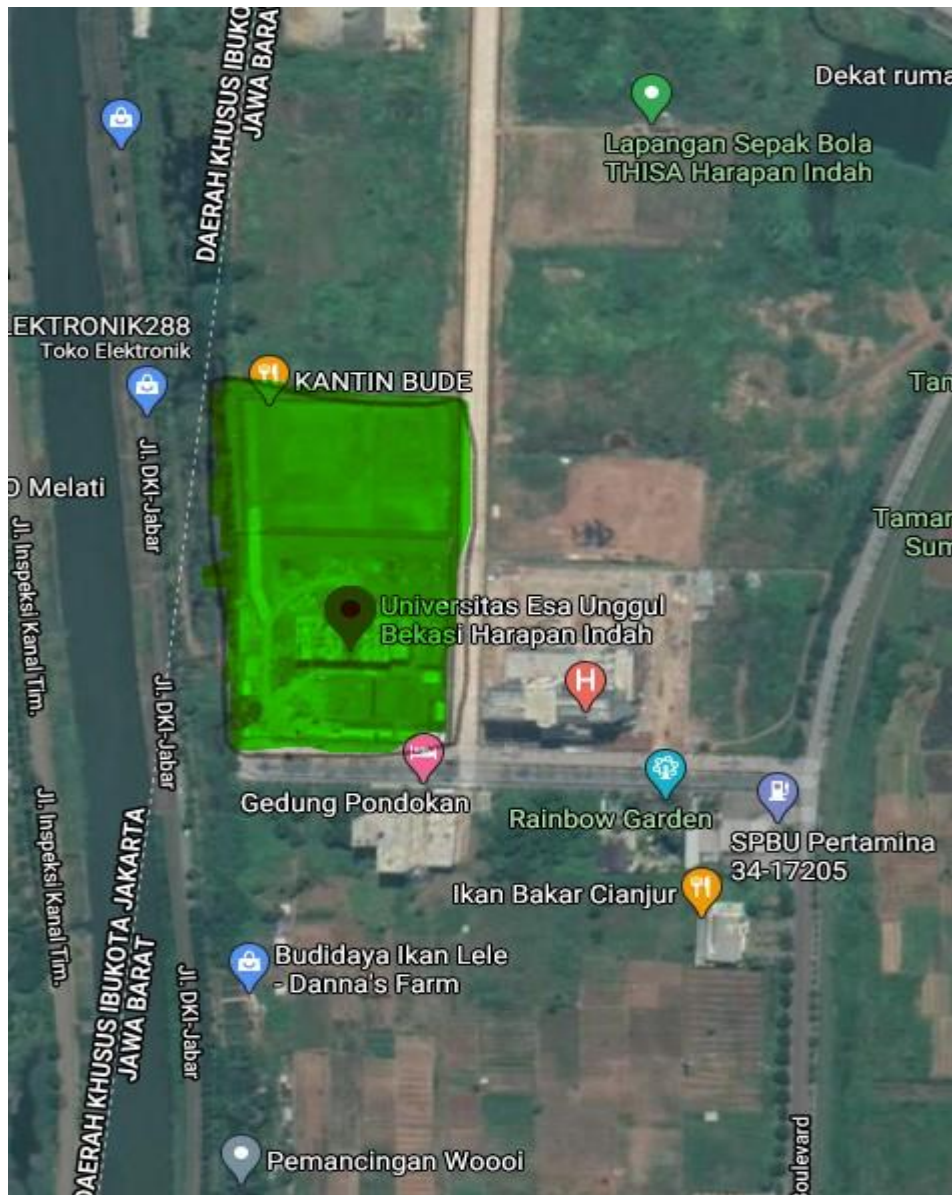
Total area: 40.497m<sup>2</sup>

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: 30.000m<sup>2</sup>

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>

## Total Campus Building Area

Picture A



**Description:**

The total area of the campus building in Esa Unggul Kebon Jeruk - Jakarta is 17,532.53m<sup>2</sup>

Additional evidence link: [www.esaunggul.ac.id](http://www.esaunggul.ac.id)

Picture B

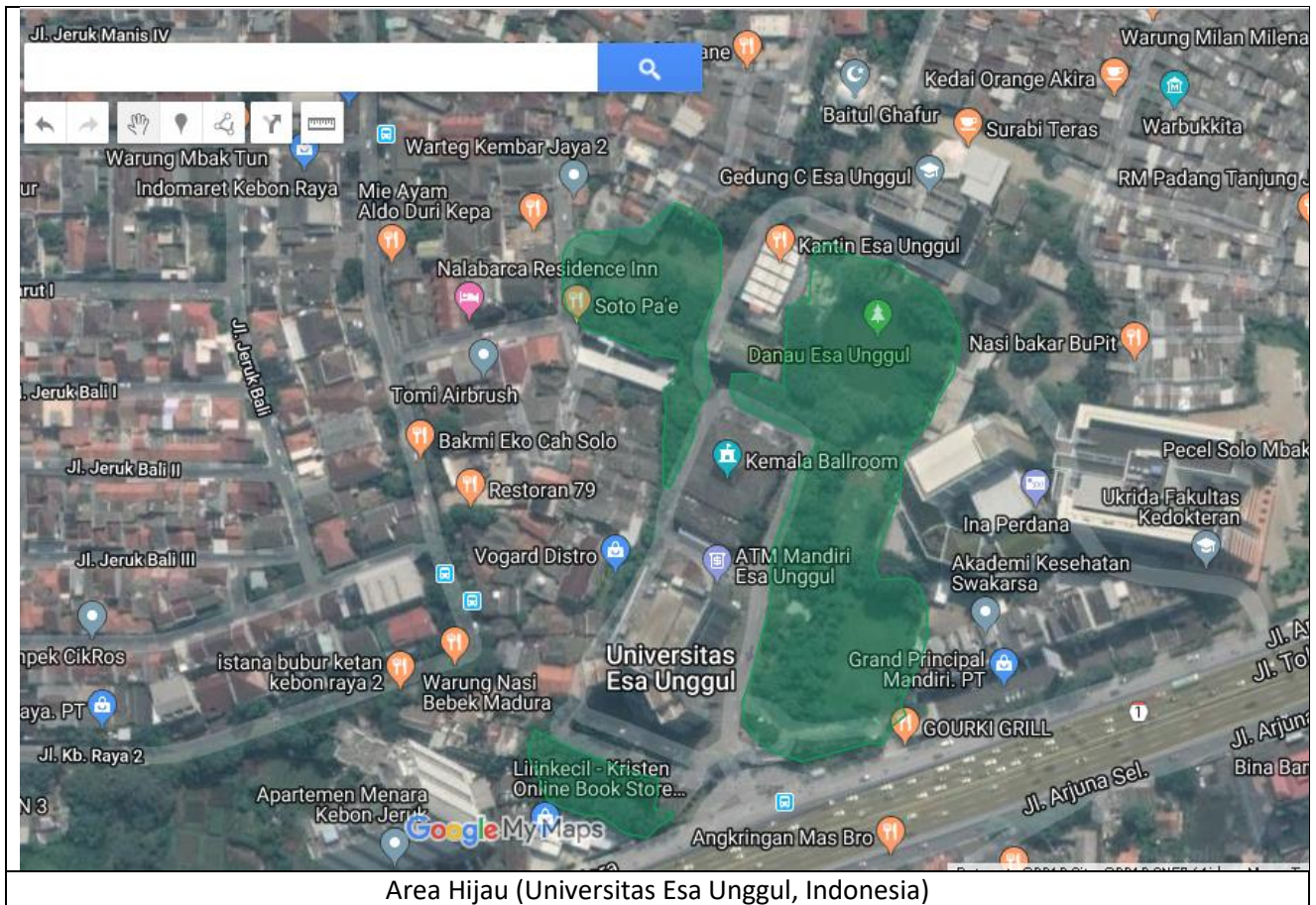


**Description:**

The total building area of the Esa Unggul Bekasi - West Java campus is 10,000m<sup>2</sup>



## Total Area on Campus Covered in Forest Vegetation (meter<sup>2</sup>)



### Description:

Total area: 40.497 m<sup>2</sup> (40% Of total area)

Total distance/circumference: 4.84 km

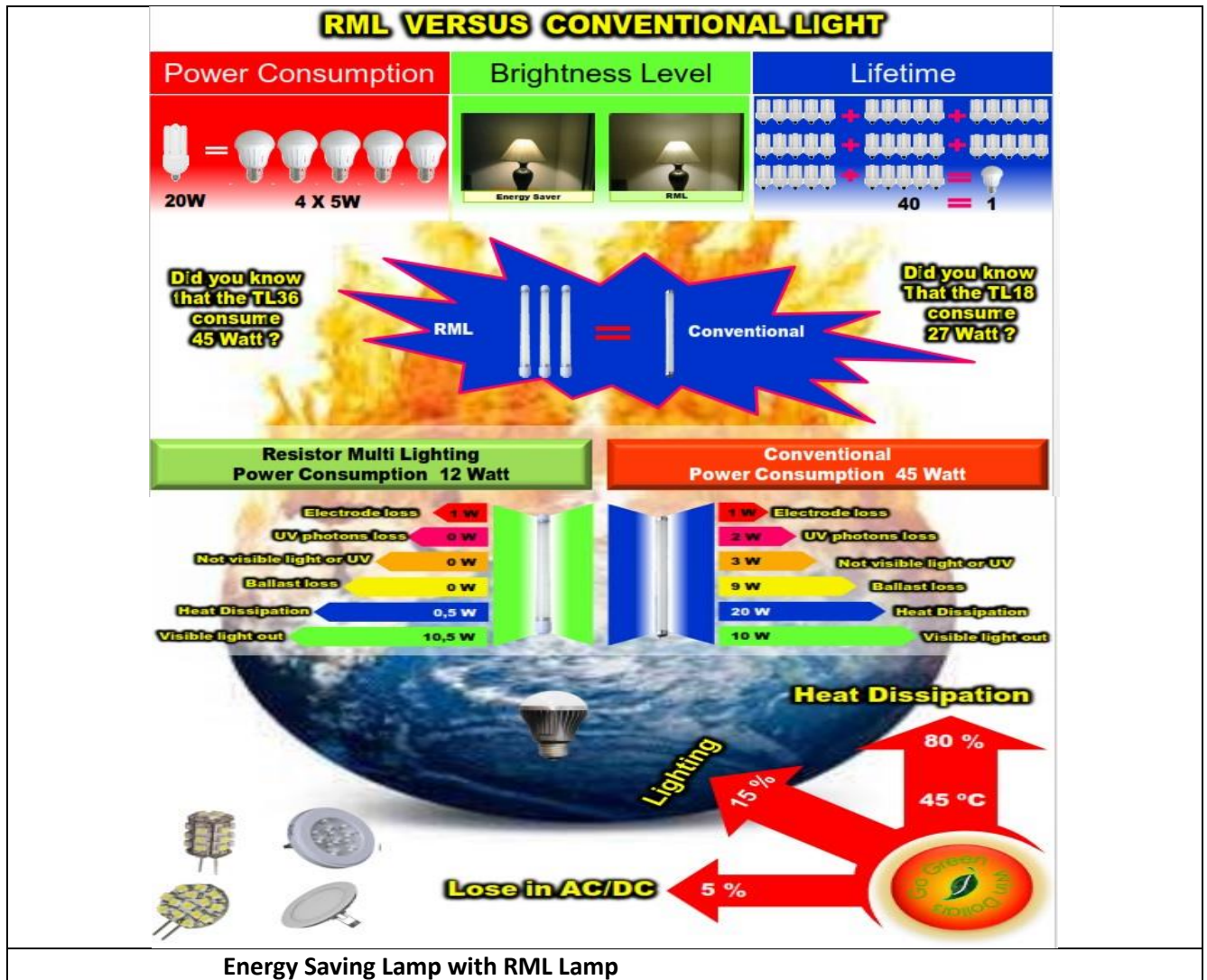




2

# Energy

## Energy Efficient Appliances Usage



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		
<b>Jumlah</b>		4.199	<b>Total Konsumsi Listirk Lampu Konvensional ( kw</b>									1.953	781,0		<b>Total Konsumsi Listirk Lampu RML (kw)</b>		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
<b>Total Biaya Pemakaian per Bulan</b>				<b>78.031.512</b>	<b>Rp/Bulan</b>

### 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
<b>Total Biaya Pemakaian per Bulan</b>				<b>18.488.107</b>	<b>Rp/Bulan</b>

### Perhitungan Penghematan Biaya Listrik

**Penghematan Listrik dari pemakaian Lampu 59.543.405 Rp/Bulan**

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

*We subsidize electricity costs to replace your Refrigerant / Freon Gas*

**ZERO Ozone Depletion Potential = 0 ODP**

*Every Refrigerant / Freon containing Chlorine destroys Ozone*



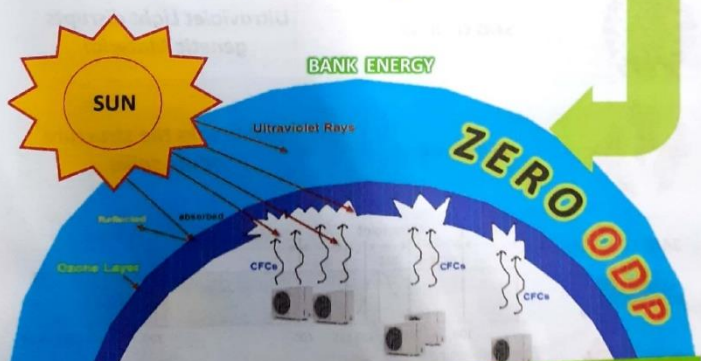
ODP = >1  
Freon  
Contents Chlorin

ODP = 0  
Freon  
chlorine free

Destroyer Ozone

Ozone safe

**BANK ENERGY**



SUN

Ultraviolet Rays

Reflected

Absorbed

Ozone Layer

CFCs

**ZERO ODP**

**TOGETHER WE CAN SAVE THE WORLD**

5

Scanned with CamScanner

Use zero ozone Deletion potential

## Smart Building Implementation

\*Min. at least five requirements for each building

No.	Name	Place	automation		safety				energy		water		Indoor environment				lighting				Building Area (m <sup>2</sup> )			
			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					13.600
	Universitas Esa Unggul Building B	Jakarta, Indonesia	x			x													x					1.548
	Universitas Esa Unggul Building C	Jakarta, Indonesia				x										x			x					4.655
	Universitas Esa Unggul Building D	Jakarta, Indonesia				x													x					720
	Universitas Esa Unggul Building A	Bekasi, Indonesia	x			x				x		x				x			x					11.000
	Total																							31.523

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

### Smart building implementation

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

$$\frac{20,523 \text{ m}^2}{40,497 \text{ m}^2} \times 100\% = 50,6\%$$

#### Note:

Additional evidence link: [www.esaunggul.ac.id](http://www.esaunggul.ac.id)



Building A	Building B
	
Building C	Building D
	

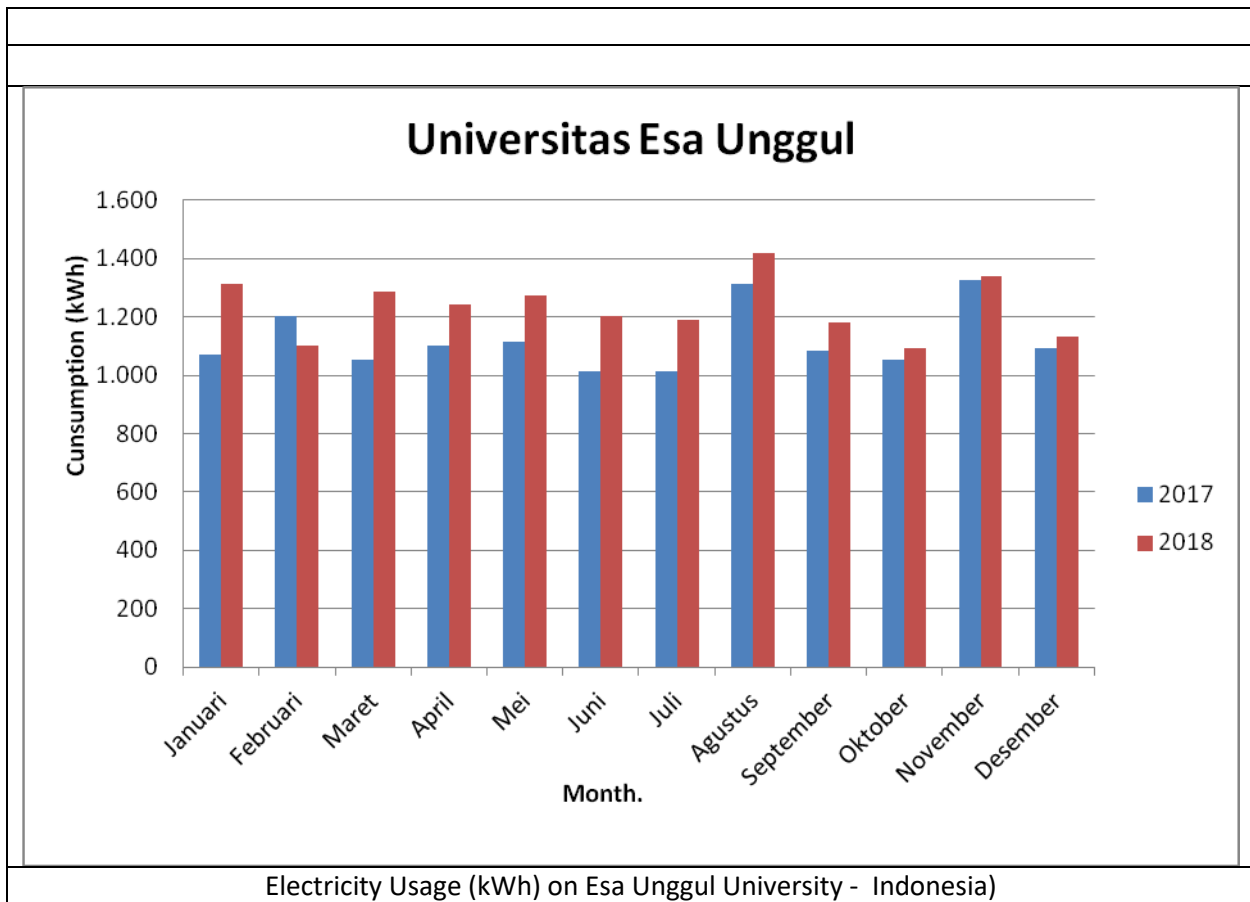


## Renewable Energy Sources in Campus



The example of biodiesel in building A and C, The rated power of the generator is 1250KW ( Building A ) and 900KW ( Building C ) the biodisel unit use for services lamp,air conditioner,computer,data center and operation maintenance building.

### Electricity Usage per Year (in Kilowatt hour)



**Description:**

The total electricity usage for Esa Unggul University Campus in 2018 is 107.142 kWh. In the main campus area Esa Unggul & laboratory for lighting, cooling, computer, laboratory equipment for more information the energy paragraph of the esa unggul 2018 anual electricity report.

**Please Provide The Total Carbon Footprint (CO<sub>2</sub> emission in the last 12 months, in metric tons)**

**Option 2: Recommended by UI GreenMetric**

**CO<sub>2</sub> (electricity)**

$$= \frac{\text{electricity usage per year (kWh)}}{1000} \times 0,84$$

$$= \frac{1,633,286 \text{ kWh}}{1000} \times 0,84$$

$$= 1,371.96 \text{ metric tons}$$

**CO<sub>2</sub> (bus)**

$$= \frac{\text{number of shuttle bus in your university} \times \text{total trips for shuttle bus service each day} \times \text{approximate travel distance of vehicle each day inside campus only (KM)} \times 240}{100} \times 0,01$$

$$= \frac{15 \times 150 \times 5 \times 240}{100} \times 0,01$$

$$= 270 \text{ metric tons}$$

**CO<sub>2</sub> (cars)**

$$= \frac{\text{number of cars entering your university} \times 2 \times \text{approximate travel distance of vehicle each day inside campus only (KM)} \times 240}{100} \times 0,02$$

$$= \frac{2,000 \times 2 \times 5 \times 240}{100} \times 0,02$$

$$= 960 \text{ metric tons}$$

**CO<sub>2</sub> (motorcycle)**

$$= \frac{\text{number of motorcycle entering your university} \times 2 \times \text{approximate travel distance of vehicle each day inside campus only (KM)} \times 240}{100} \times 0,01$$

$$= \frac{4,000 \times 2 \times 5 \times 240}{100} \times 0,01$$

$$= 960 \text{ metric tons}$$

**CO<sub>2</sub> (total)**

$$= 1,371.96 + 270 + 960 + 960$$

$$= 3,561.96 \text{ metric tons}$$

**Carbon footprint in 2018 = 3,561.96 metric tons**

Example of Total Carbon Footprint (UI GreenMetric)

**Description:**

*(Please describe the total carbon footprint on your campus. You can describe more related items if needed.)*

.....  
 .....

**Additional evidence link:**



**3**

**Waste**

## Recycling Program for University Waste



Recycling Program for University Waste (Esa Unggul University, Indonesia)



Recycling Program for University Waste (University of Esa Unggul, Indonesia)

### Description:

Esa Unggul uses a local recycling which has implemented single stream recycling, to prepare student and faculty have guidance campus also promotes recycling with specific category for papers, glass, can/aluminium so easier to be application.

## Program to Reduce the Use of Paper and Plastic on Campus

	 <p>2</p> <p>Paper separation</p>	
		
<p>3</p>	<p>Example of Program to Reduce the Use of Paper and Plastic in Campus (Esa Unggul University, Indonesia)</p>	

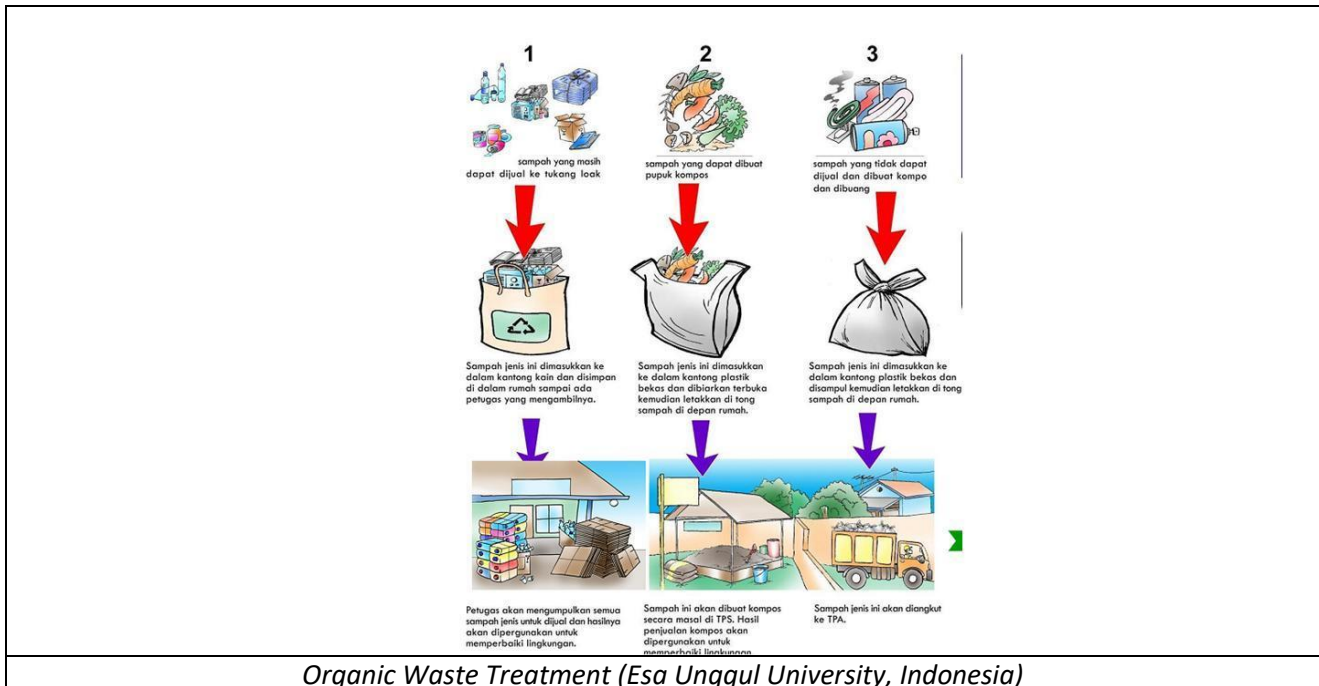
### Description:

1. Esa Unggul supports paperless system to reduce paper in daily workplace. It can reduce a lot of paper use that mean Esa Unggul University can reduce CO2 emissions and save the world.
2. Solutions of reusable paper in back office, e.g. using 2-side of paper, always recheck your data before print, use online system instead of hard copy.
3. Esa Unggul University has a policy of "Reduce Reuse plastic bag in the last 2 years. We can reduce around 1,5 million bags per year or reduce 80% of plastic waste in university", "consistent with the campaign reduce plastic and use tumbler".

Esa Unggul project use tumbler for meeting and several activity every membersin campu, not use drink with plastic package, focus of campaign on " Reduce Plastic Pollution " and efficient cost for drink expense budget.



## Organic Waste Treatment



### Description:

Esa Unggul is separate with organic and unorganic wastes. The wastes manage are canteens and cafeteria then deliver to plants. The organic wastes use for fertilizer useful for campus parks.

## Inorganic Waste Treatment

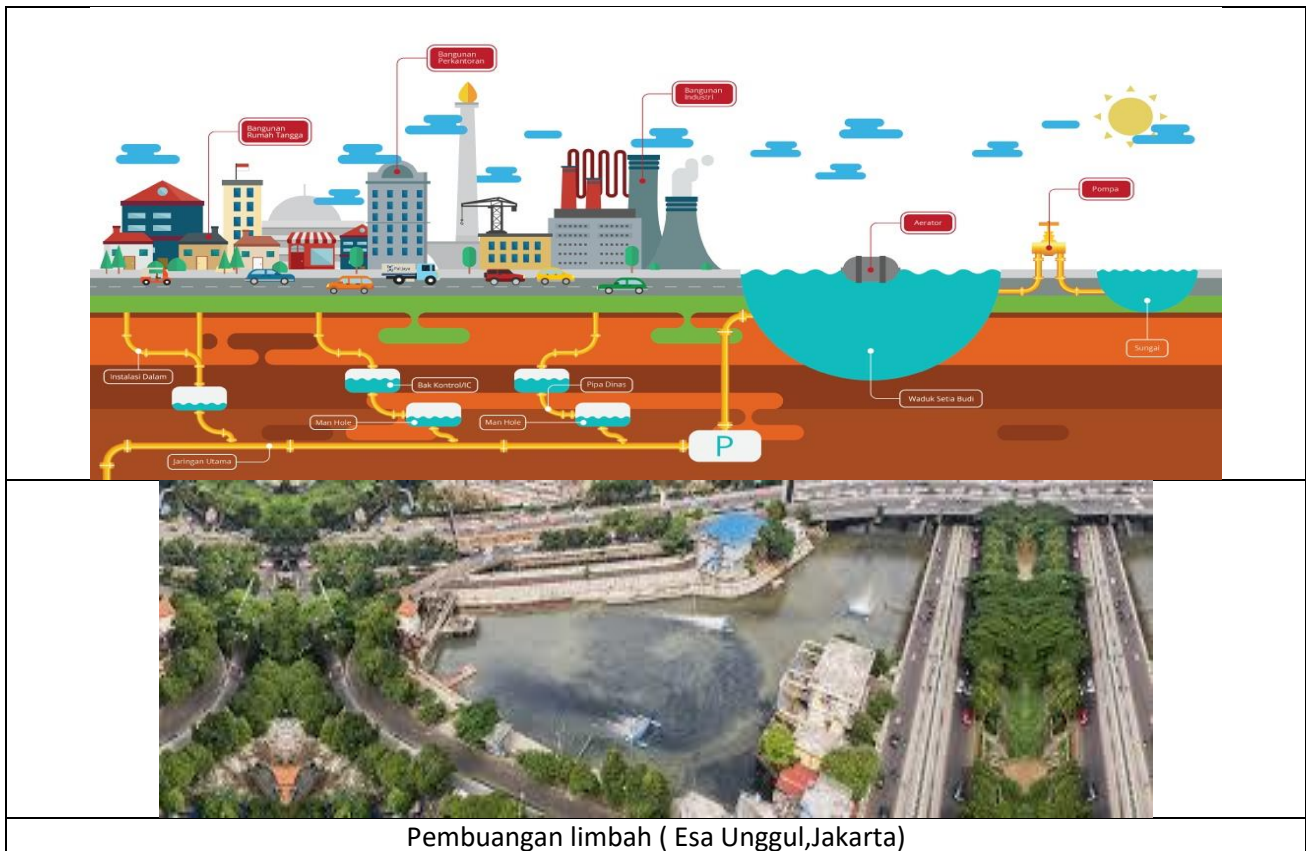


Inorganic Waste Treatment (Universitas Esa Unggul, Indonesia)

### Description:

1. Inorganic waste treatment at Esa Unggul University - Indonesia in collaboration with companies in Jakarta, has estimated that the installation of inorganic waste collectors where (Electrical and Electronic Waste Equipment) can be collected.
2. The Battery Project: the project, starting from collaboration between the University, DKI Jakarta has the aim to increase the awareness of users and citizens about collection and recycling.

## Sewage Disposal



### Description:

Provision of waste water management piping System/centralized system to overcome the problems of soil and surface water pollution in the province of DKI Jakarta. Referring to the decree of the Governor No. 45 year 1992, that every building located in an area that has been attached wastewater pipes are obliged to dispose of the waste water to the pipe through a narrow pipe connection.

By removing waste water to PD PAL Jaya piping Channels, the university does not need to make septic tanks or local wastewater treatment (IPAL) installations. Wastewater from grey water and from biological waste such as human stool (black water) will be transmitted through a piping system to a centralized wastewater treatment plant (IPAL). The waste water that enters the IPAL is further processed until it meets the quality standards for disposal to the receiver's water body (river)

### Additional evidence link:

4

**Water**



## Water Conservation Program Implementation

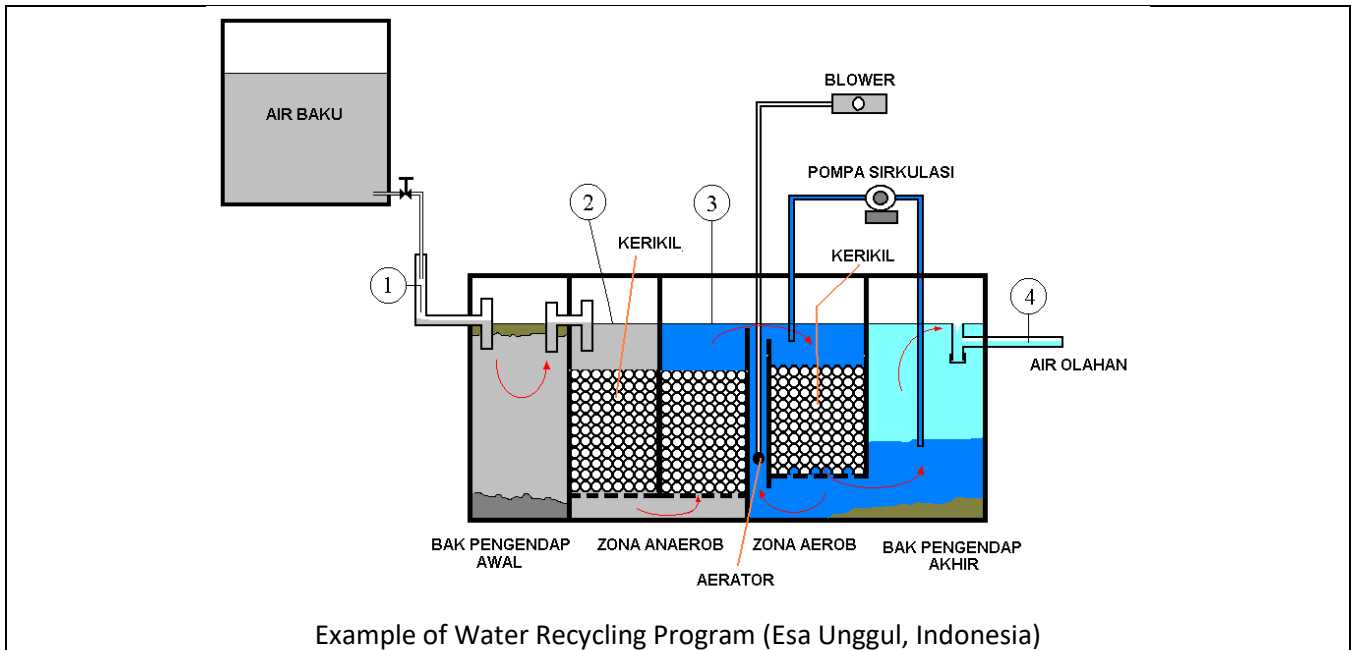


Water Conservation – Rain Water Collection (University of Esa Unggul, Indonesia)

### 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.

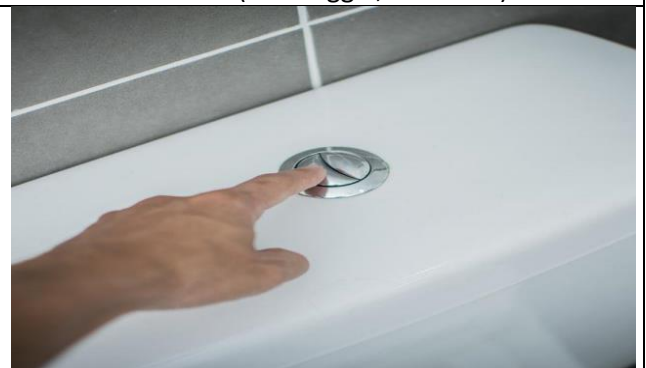
**Water Efficient Appliances Usage (e.g. hand washing taps, toilet flush, etc.)**



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



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



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

**Description:**

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

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



**5**

# **Transportation**




## Vehicle Population

Picture A	Picture B
	

**Description:**

*The number of vehicles both cars and motorbikes based on campus population at esa unggul University*

## Shuttle Services



### Rute Shuttle Kampus Bus Universitas Esa Unggul

Lapsan tanpa judul

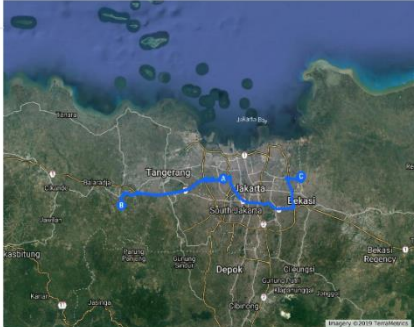
Petunjuk arah dari Universitas Esa Unggul, Jalan Ajuna Utara, RT.1/PW.2, Duri Kaya, Kota Jakarta Barat, Daerah Khusus Bukota Jakarta ke Universitas Esa Unggul Bekasi Harapan Indah, Jalan Srengedani Raya Kota Harapan Indah, Harapan Mulya, Kota Bekasi, Jawa Barat

Universitas Esa Unggul, Jalan Ajuna Utara, RT.1/PW.2, Duri Kaya, Kota Jakarta Barat, Daerah Khusus Bukota Jakarta


Universitas Esa Unggul Kampus Citra Raya, Melkar Bakri, Tangerang, Banten

University Esa Unggul Bekasi Harapan Indah, Jalan Srengedani Raya Kota Harapan Indah, Harapan Mulya, Kota Bekasi, Jawa Barat

Rute Shuttle Kampus Bus Universitas Esa Unggul



### Shuttle Services (Esa Unggul University, Indonesia)



#### JADWAL BUS KAMPUS UNIVERSITAS ESA UNGGUL

HALTE TRANS - KAMPUS						KAMPUS - HALTE TRANS					
SENIN	SELASA	RABU	KAMIS	JUM'AT	SABTU	SENIN	SELASA	RABU	KAMIS	JUM'AT	SABTU
07:15	07:15	07:15	07:15	07:15	09:15	08:00	08:00	08:00	08:00	08:00	09:30
08:15	08:15	08:15	08:15	08:15	09:45	08:30	08:30	08:30	08:30	08:30	11:30
08:45	08:45	08:45	08:45	08:45	11:45	09:30	09:30	09:30	09:30	09:30	12:30
09:45	09:45	09:45	09:45	09:45	12:45	10:00	10:00	10:00	10:00	10:00	13:15
11:15	11:15	11:15	11:15	11:15	13:30	12:30	12:30	12:30	12:30	12:30	14:00
12:45	12:45	12:45	12:45	12:45	14:15	13:00	13:00	13:00	13:00	13:00	14:30
14:15	14:15	14:15	14:15	14:15	14:45	13:45	13:45	13:45	13:45	13:45	15:45
15:15	15:15	15:15	15:15	15:15	16:00	16:00	16:00	16:00	16:00	16:00	16:30

KAMPUS - GEDUNG M,N					GEDUNG M,N - KAMPUS						
SENIN	SELASA	RABU	KAMIS	JUM'AT	SABTU	SENIN	SELASA	RABU	KAMIS	JUM'AT	SABTU
	07:30				11:45		10:30				14:30
	10:15				16:00		13:00				17:50
	18:45						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

### Shuttle Services – Bus Timetable


#### Description:

Shuttle service is served on campus especially for students according to a predetermined schedule starting from the shuttle to the campus regular and free. To view all the timetables students can see the schedule directly.

#### Additional evidence link:

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

## Zero Emission Vehicles (ZEV) Policy on Campus

	
<p>Campus Bikes (University Esa Unggul, Indonesia)</p>	<p>Pedestrian Path</p>

### Description:

All Esa Unggul University sites are cyclists and pedestrian-friendly. Many have vehicle free lanes for these users. There is a 5 mph speed limit on all internal roads, and bicycle lanes on public roads.







## Number of Transportation Initiatives to Decrease Private Vehicles on Campus

 <p>#Kampusbersih</p>	 <p>#yuknaikbus</p>
<p>Program Initiatives (Esa Unggul University, Indonesia)</p>	<p>Bus Campus Programm (Esa Unggul University, Indonesia)</p>

**Description:**

Have two transportation initiatives to decrease private vehicles on Esa Unggul University

1. help reduce air pollution
2. take the campus bus on campus

**Additional evidence link:**

## 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

No	Program Studi/Jurusan	Mata Kuliah	Keterangan
1	<b>Perencanaan wilayah kota (Urban Planing)</b>	Infrastruktur wilayah dan kota	
		Perencanaan wilayah	
		Tata guna dan pengembangan lahan	
2	<b>Bioteknologi (Biotechnology)</b>	Fisiologi hewan dan tumbuhan	
3	<b>Kesehatan masyarakat (Public Health)</b>	Dasar – dasar kehatan lingkungan	
		Pengelolaan limbah lingkungan	
		Pencemaran lingkungan	

### Description:

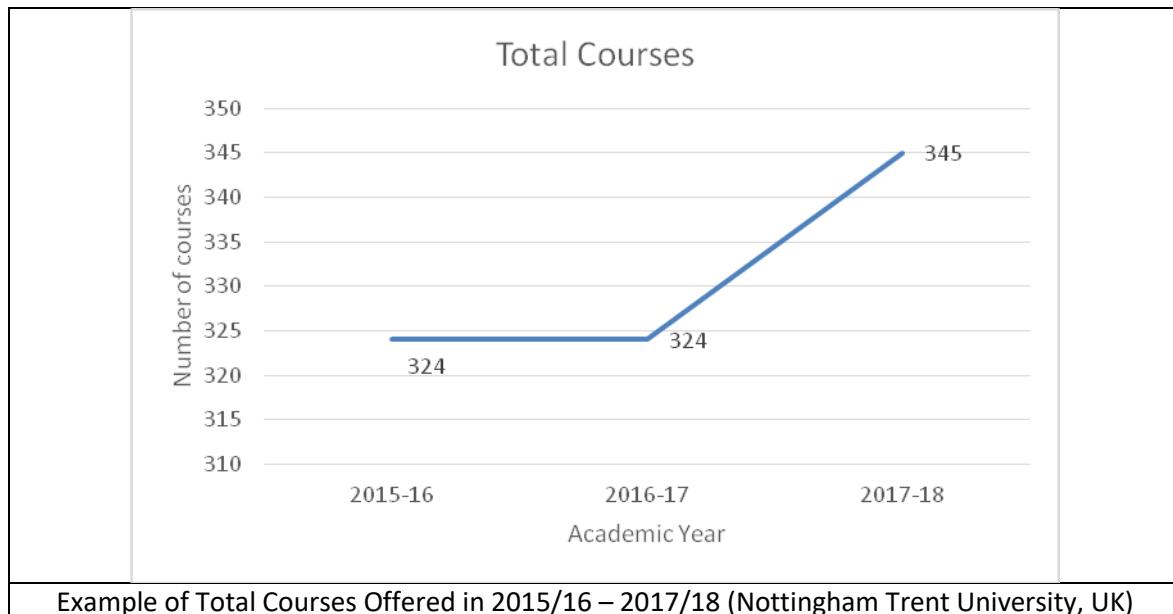
The above is a list of programs that have undergone changes approved through the Curriculum program which aims to instill sustainability in all course content and modules offered by the University.

The list also includes courses with sustainability that are already embedded, and which include a Certificate of Sustainability in Practice as part of the core curriculum.

Total number of courses with sustainability embedded for courses running in 2018



## Total Number of Courses/Subjects Offered



Example of Total Courses Offered in 2015/16 – 2017/18 (Nottingham Trent University, UK)

### Description:

*(Please describe the total of courses/subjects offered on your campus. The following is an example of the description. You can describe more related items if needed.)*

Total number of courses offered in 2017/18 = 345 courses (not modules)

### Additional evidence link:

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

Research Title	Name Of Researcher	Research Time	Research Fund
Kloning gen cryIII dari Bacillus thuringiensis Isolat Lokal Untuk Produksi Tanaman Ubijalar transgenik Tahan Hama Boleng	Dr HENNY SARASWATI S.S.I, M.Biomed	3	\$14,769.57
VALIDASI DAN EKSPANSI PENGGUNA AKHIR ELECTRONIC INTEGRATED ANTENATAL CARE (e-iANC)	Dr HOSIZAH S.KM, M.KM	3	\$12,781.82
MODEL MEDIA KIE (komunikasi, informasi, edukasi) PADA PENCEGAHAN HYPOHIDRASI KEHAMILAN DI WILAYAH PUSKESMAS KECAMATAN KEBON JERUK, JAKARTA BARAT	Dr. ERRY YUDHYA MULYANI S.Gz, M.Sc.	3	\$21,143.60
PENGEMBANGAN DAN IMPLEMENTASI GPS TRACKING MOBILE ON-BASE IOT UNTUK MENINGKATKAN DAYA GUNA DAN SAING EKSPEDISI	Ir Ir NIZIRWAN ANWAR M.T	3	\$11,221.88

## Number of Events Related To Sustainability

<p style="text-align: center;">Picture A</p>	<p style="text-align: center;">Picture B</p>
<p style="text-align: center;">Gizi UEU : Cara Milenial Hadapi COVID-19 dengan Gizi dan Olahraga</p>	<p style="text-align: center;">Farmasi UEU Produksi Hand Sanitizer</p>
<p style="text-align: center;">Picture C</p>	<p style="text-align: center;">Picture D</p>
<p style="text-align: center;">Public Health Webinar : Pengolahan Limbah</p>	<p style="text-align: center;">Public Health Webinar : Airborne Disease</p>

### Description:

Events related to environment and sustainability hosted or organized by the UEU in the academic year 2018-2020.

Total number of sustainability/environment related events in:

2017/2018: 65

2018/2019: 52

2019/2020: 38

Additional evidence link: Picture A : <https://fikes.esaunggul.ac.id/cara-milenial-hadapi-covid-19-dengan->

Additional evidence link: Picture B : <https://fikes.esaunggul.ac.id/prodi-farmasi-ueu-produksi-hand->

Additional evidence link: Picture C : <https://www.youtube.com/watch?v=5WCrOduIAqk>

Additional evidence link: Picture D : <https://www.youtube.com/watch?v=LHSfyquv4-0>