



# *Certificate*

This certificate is awarded to

**King Mongkut's University of Technology North  
Bangkok**

as The 332<sup>nd</sup> World's Most Sustainable University  
in 2021 UI GreenMetric World University Rankings

Jakarta, 14 December 2021



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Rector of Universitas Indonesia



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Chairperson of UI GreenMetric  
World University Rankings



UNIVERSITAS  
INDONESIA

*Veritas, Probitas, Iustitia*



FACT FILE 2021

UI GREENMETRIC  
WORLD UNIVERSITY RANKINGS



KING MONGKUT'S UNIVERSITY OF  
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Thailand

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# UNIVERSITY PROFILE

**Name** : King Mongkut's University of  
Technology North Bangkok

**Established** : 1959

**Country** : Thailand



## 1. VERIFIED DATA

Category	Point	Maximum Point	Percentage
Setting and Infrastructure (SI)	700	1500	46.67 %
Energy and Climate Change (EC)	1,150	2100	54.76 %
Waste (WS)	1,200	1800	66.67 %
Water (WR)	650	1000	65.00 %
Transportation (TR)	1,525	1800	84.72 %
Education (ED)	1,250	1800	69.44 %
<b>Total Score</b>	<b>6,475</b>	<b>10000</b>	<b>64.75 %</b>

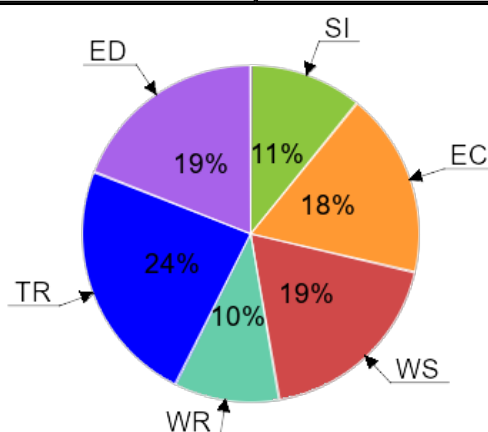


figure 1.1 Overall Score Diagram

## 2. RESULTS SUMMARY

<b>World Ranking</b>	<b>SI Ranking</b>	<b>EC Ranking</b>	<b>WS Ranking</b>
<b>332</b>	<b>683</b>	<b>338</b>	<b>336</b>
	<b>WR Ranking</b>	<b>TR Ranking</b>	<b>ED Ranking</b>
	<b>386</b>	<b>73</b>	<b>399</b>

## 3. WORLD RANKINGS HISTORY

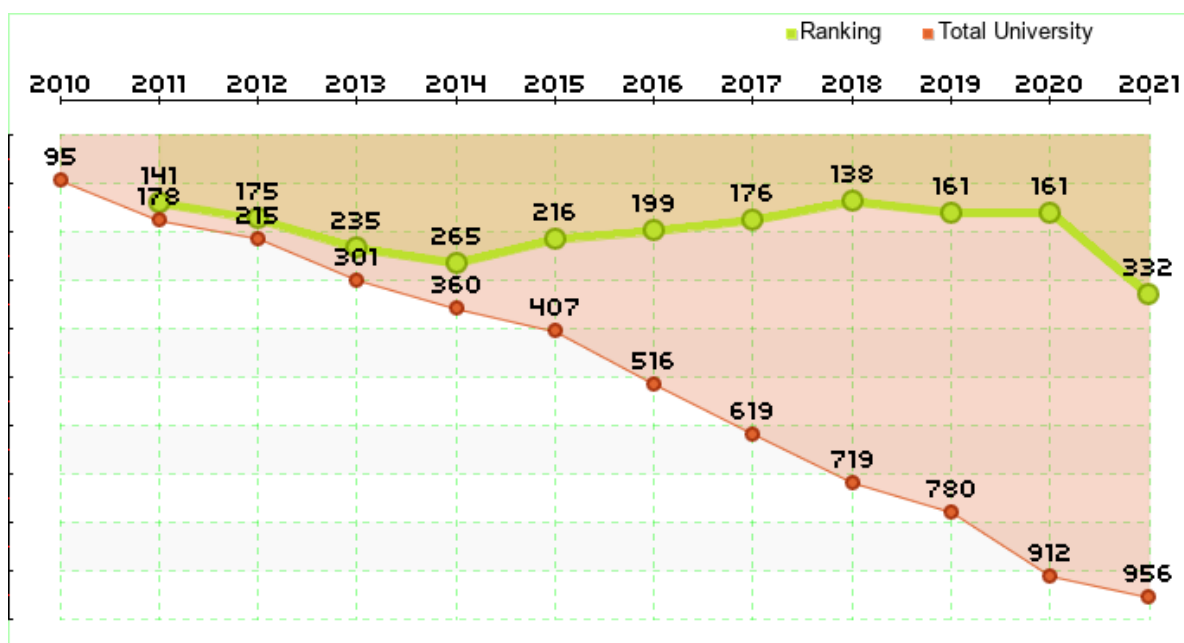


Figure 3.1 World Rankings History Diagram

## 4. RANKING IN THAILAND

<b>Country Ranking</b>	<b>SI Ranking</b>	<b>EC Ranking</b>	<b>WS Ranking</b>
<b>21</b>	<b>14</b>	<b>12</b>	<b>9</b>
	<b>WR Ranking</b>	<b>TR Ranking</b>	<b>ED Ranking</b>
	<b>3</b>	<b>4</b>	<b>24</b>

## 5. RESULTS DETAIL

### Setting and Infrastructure

Indicator		Score
SI.1	The ratio of open space area towards total area	150
SI.2	Area on campus covered in forest	100
SI.3	Area on campus covered in planted vegetation	100
SI.4	Area on campus for water absorbance	25
SI.5	The ratio of open space area divided campus population	200
SI.6	University budget for sustainability effort	50
SI.7	Percentage of operation and maintenance activities of building during Covid-19 pandemic	25
SI.8	Campus facilities for disabled, special needs and or maternity care	0
SI.9	Security and safety facilities	25
SI.10	Health infrastructure facilities for students, academics and administrative staff's wellbeing	25
SI.11	Conservation: plant, animal and wildlife, genetic resources for food and agriculture secured in either medium or long-term conservation facilities	0

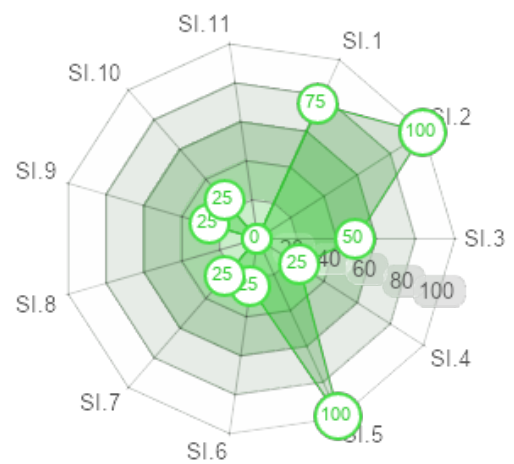


Figure 5.1 Percentage of Score to Maximum Score for Setting and Infrastructure



## Energy and Climate Change

Indicator		Score
EC.1	Energy efficient appliances usage	100
EC.2	Smart building program implementation	75
EC.3	Number of renewable energy source in campus	300
EC.4	The total electricity usage divided by total campus population	150
EC.5	The ratio of renewable energy production towards total energy usage per year	150
EC.6	Element of green building implementation	200
EC.7	Greenhouse gas emission reduction program	150
EC.8	The ratio of total carbon footprint divided campus population	0
EC.9	Number of innovative program(s) during covid-19 pandemic	25
EC.10	Impactful university program(s) on climate change	0

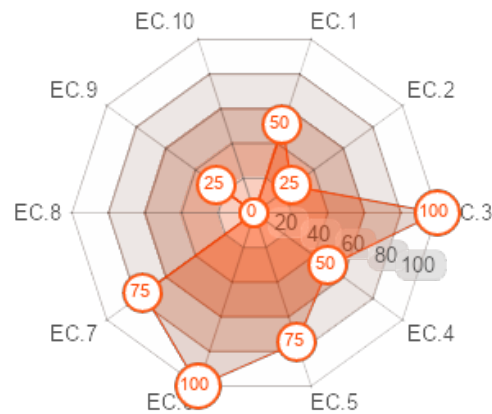


Figure 5.2 Percentage of Score to Maximum Score for Energy and Climate Change

## Waste

Indicator		Score
WS.1	Recycling program for university waste	150
WS.2	Program to reduce the use of paper and plastic in campus	300
WS.3	Organic waste treatment	150
WS.4	Inorganic waste treatment	150
WS.5	Toxic waste treatment	225
WS.6	Sewerage disposal	225

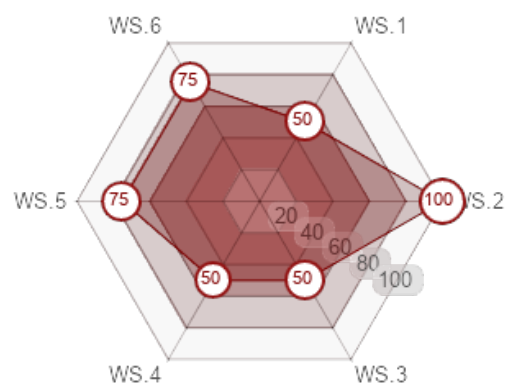


Figure 5.3 Percentage of Score to Maximum Score for Waste

## Water

Indicator		Score
WR.1	Water conservation program	200
WR.2	Water recycling program	150
WR.3	The use of water efficient appliances	150
WR.4	Piped water consumed	100
WR.5	Percentage of additional handwashing and sanitation facilities during Covid-19 pandemic	50

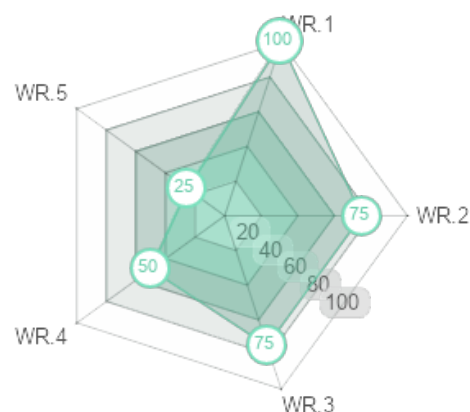


Figure 5.4 Percentage of Score to Maximum Score for Water

## Transportation

Indicator		Score
TR.1	The ratio of total vehicles (cars and motorcycles) divided by total campus population	150
TR.2	Shuttle services	300
TR.3	Zero Emission Vehicles (ZEV) policy on campus	200
TR.4	The ratio of Zero Emission Vehicles (ZEV) divided by total campus population	100
TR.5	Ratio of parking area to total campus area	200
TR.6	Transportation program designed to limit or decrease the parking area on campus for the last 3 years	150
TR.7	Number of transportation initiatives to decrease private vehicles on campus	200
TR.8	Pedestrian policy on campus	225

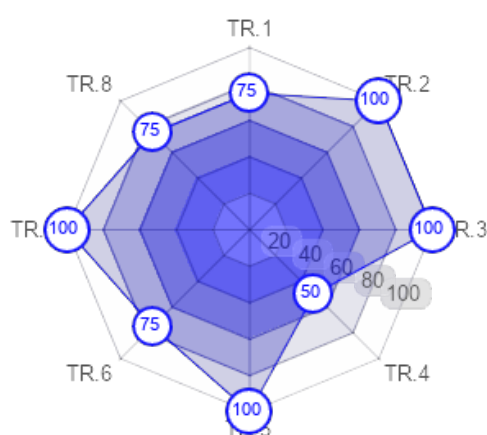


Figure 5.5 Percentage of Score to Maximum Score for Transportation

## Education

Indicator		Score
ED.1	The ratio of sustainability courses towards total courses/modules	225
ED.2	The ratio of sustainability research funding towards total research funding	200
ED.3	Sustainability publications	100
ED.4	Sustainability events	150
ED.5	Sustainability student organizations	100
ED.6	Sustainability websites	200
ED.7	Sustainability report	100
ED.8	Sustainability report	100
ED.9	Sustainability report	25
ED.10	Sustainability report	25
ED.11	Sustainability report	25

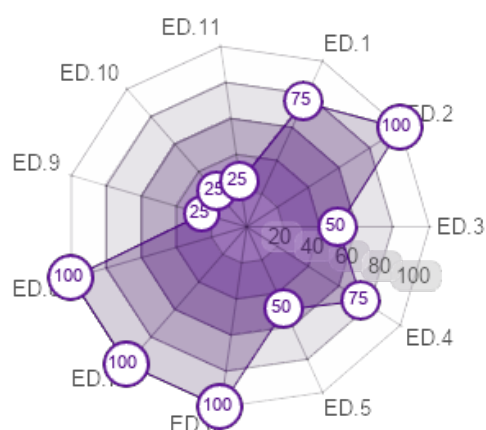


Figure 5.6 Percentage of Score to Maximum Score for Education



# UI GREENMETRIC WORLD UNIVERSITY RANKINGS

## About UI GreenMetric

UI GreenMetric World University Rankings is an annual publication of university rankings on sustainability. It is an initiative from the University of Indonesia that ranks universities around the world based on their commitment and actions towards sustainability. UI GreenMetric World University Rankings aims to increase university awareness towards sustainability.

## History

UI GreenMetric World University Rankings is a non-profit initiative of University of Indonesia developed since 2010.

In 2009 the University of Indonesia hosted an International Conference on World University Rankings. The conference was attended by World University rankers such as Webometrics, HEEACT, and others. In 2010, Prof. Dr. Gumilar Rusliwa Somantri as Rector of the University of Indonesia at that time-initiated UI GreenMetric World University Rankings and appointed Prof. Riri Fitri Sari as the chairperson. Soon a team consisting of Junaidi, Budi Hartono, Allan Lauder, and Prof. Dr. Ir. Gunawan Tjahjono formulated UIGM Questionnaire and introduced UI Ranking to the world. In 2011, 11 new indicators in 5 categories have been added. Subsequently Education has been added as a new category in 2012. By the year 2015, a massive improvement was introduced including carbon footprint and a more systematic data collection. In 2016 an online based review and validation system has been set for the assessors.

UIGM took Policy into Action in 2016; Global Partnership for Sustainable Future in 2017; Universities, Impacts, and Sustainable Development Goals (SDGs) in 2018; Sustainable University in a Changing World: Lessons, Challenges and Opportunities in 2019; Universities' Responsibility for Sustainable Development Goals and World's Complex Challenges in 2020; and Universities, UI GreenMetric, and SDGs in the Time of Pandemic in 2021 as its annual themes. In 2021, 956 universities from 80 countries participate in the rankings.

To reach and coordinate more participating universities, UI GWURN was established in 2017 with a national coordinator in each country. To make it work, Junaidi formulated strategic framework for the network. Currently, there are 32 national coordinators in Asia, America, Africa and Europe. Each voluntarily organizes national workshop inviting other universities in their country. Since its establishment in 2010, it has been increasingly recognized as the first and only universities ranking on sustainability and has been used by participating universities to benchmark and do continuous improvement in the area of sustainability.

As a member of IREG, more activities and collaboration among participating universities are expected to achieve our common goal: sustainable university for sustainable future. UI GreenMetric itself developed its own ranking system by studying other ranking systems such as: The Times Higher Education World University Rankings (THE) sponsored by Thompson Reuters, the QS World University Rankings, the Academic Ranking of World Universities (ARWU) published by Shanghai Jiao Tong University (SJTU), and the Webometrics Ranking of World Universities (Webometrics), published by Cybermetrics Lab, CINDOC-CSIC in Spain.

## Methodology

UI GreenMetric collects data through online questionnaire. All participant answered some questions for some period. After that, UI GreenMetric expert members and reviewers validate the answers based on evidence that participants provide. This year's categories and weighting of points are shown as follows. The specific indicators and their points awarded are shown in Table 3. Each indicator has been uniquely identified by a category code and a number (e.g., SI 5).

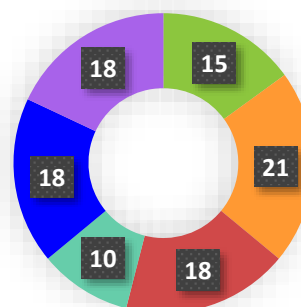
Table 1. UI GreenMetric Timeline

UI GreenMetric Timeline	
2010	UI GreenMetric published for 95 Universities
2011	UI GreenMetric added 11 new indicators within 5 categories
2012	Education became one of the categories
2015	Introducing Carbon Footprint and factfile document
2016	Focusing on university action towards sustainability
2017	UIGWURN established
2018	Focusing on SGDs and enlargement of memberships
2019	Improving questionnaire and data collection method
2020	Three new questions on social and economic impacts, such as (1) Startup for the green economy; (2) Public access to open spaces; (3) Community services
2021	Introducing social, cultural, economic, and pandemic aspects in the questionnaire

In our list, universities with the same total score will be ranked according to the highest weighted indicators, i.e firstly based on its Energy and Climate Change (EC) score, then based on the total score for Waste (WS), Transportation (TR), Education (ED). Subsequently it will be based on its Setting and Infrastructure (SI) score, and last will depend on its Water (WR) score.

Table 2. Categories used in the ranking and their weighting

No	Category	Percentage of Total Points (%)
1	Setting and Infrastructure (SI)	15
2	Energy and Climate Change (EC)	21
3	Waste (WS)	18
4	Water (WR)	10
5	Transportation (TR)	18
6	Education (ED)	18
	<b>TOTAL</b>	<b>100</b>



The specific indicators and their points awarded are shown in Table 3. Each indicator has been uniquely identified by a category code and a number (e.g., SI 5).

Table 3 Indicators and categories

No	CRITERIA	Point	Weighting
<b>1</b>	<b>Setting and Infrastructure (SI)</b>		<b>15%</b>
<b>SI1</b>	The ratio of open space area to total area	200*	
<b>SI2</b>	Total area on campus covered in forest vegetation	100*	
<b>SI3</b>	Total area on campus covered in planted vegetation	200*	
<b>SI4</b>	Total area on campus for water absorption besides the forest and planted vegetation	100*	
<b>SI5</b>	The total open space area divided by total campus population	200*	
<b>SI6</b>	Percentage of university budget for sustainability efforts	200	
<b>SI7</b>	Percentage of operation and maintenance activities of building during Covid-19 pandemic	100*	
<b>SI8</b>	Campus facilities for disabled, special needs and or maternity care	100*	
<b>SI9</b>	Security and safety facilities	100*	
<b>SI10</b>	Health infrastructure facilities for students, academics and administrative staff's wellbeing	100*	
<b>SI11</b>	Conservation: plant, animal and wildlife, genetic resources for food and agriculture secured in either medium or long-term conservation facilities	100*	
	<b>Total</b>	<b>1500</b>	
<b>2</b>	<b>Energy and Climate Change (EC)</b>		<b>21%</b>
<b>EC1</b>	Energy efficient appliances usage	200	
<b>EC2</b>	Smart building implementation	300	
<b>EC3</b>	Number of renewable energy sources on campus	300	
<b>EC4</b>	Total electricity usage divided by total campus' population (kWh per person)	300	
<b>EC5</b>	The ratio of renewable energy production divided by total energy usage per year	200	
<b>EC6</b>	Elements of green building implementation as reflected in all construction and renovation policies	200*	
<b>EC7</b>	Greenhouse gas emission reduction program	200	
<b>EC8</b>	Total carbon footprint divided by total campus' population (metric tons per person)	200*	
<b>EC9</b>	Number of innovative program(s) during covid-19 pandemic	100*	

<b>EC10</b>	Impactful university program(s) on climate change	100*	
	<b>Total</b>	<b>2100</b>	
<b>3</b>	<b>Waste (WS)</b>		<b>18%</b>
<b>WS1</b>	Recycling program for university's waste	300	
<b>WS2</b>	Program to reduce the use of paper and plastic on campus	300	
<b>WS3</b>	Organic waste treatment	300	
<b>WS4</b>	Inorganic waste treatment	300	
<b>WS5</b>	Toxic waste treatment	300	
<b>WS6</b>	Sewage disposal	300	
	<b>Total</b>	<b>1800</b>	
<b>4</b>	<b>Water (WR)</b>		<b>10%</b>
<b>WR1</b>	Water conservation program & implementation	200*	
<b>WR2</b>	Water recycling program implementation	200*	
<b>WR3</b>	Water efficient appliances usage	200	
<b>WR4</b>	Consumption of treated water	200	
<b>WR5</b>	Percentage of additional handwashing and sanitation facilities during Covid-19 pandemic	200*	
	<b>Total</b>	<b>1000</b>	
<b>5</b>	<b>Transportation (TR)</b>		<b>18%</b>
<b>TR1</b>	The total number of vehicles (cars and motorcycles) divided by total campus' population	200	
<b>TR2</b>	Shuttle services	300	
<b>TR3</b>	Zero Emission Vehicles (ZEV) policy on campus	200	
<b>TR4</b>	The total number of Zero Emission Vehicles (ZEV) divided by total campus population	200	
<b>TR5</b>	Ratio of ground parking area to total campus' area	200	
<b>TR6</b>	Program to limit or decrease the parking area on campus for the last 3 years (from 2018 to 2020)	200	
<b>TR7</b>	Number of initiatives to decrease private vehicles on campus	200	
<b>TR8</b>	Pedestrian path on campus	300	
	<b>Total</b>	<b>1800</b>	
<b>6</b>	<b>Education and Research (ED)</b>		<b>18%</b>
<b>ED1</b>	The ratio of sustainability courses to total courses/subjects	300	
<b>ED2</b>	The ratio of sustainability research funding to total research funding	200*	
<b>ED3</b>	Number of scholarly publications on sustainability	200*	
<b>ED4</b>	Number of events related to sustainability	200*	
<b>ED5</b>	Number of student organizations related to sustainability	200*	
<b>ED6</b>	University-run sustainability website	200	
<b>ED7</b>	Sustainability report	100	
<b>ED8</b>	Number of cultural activities on campus	100*	
<b>ED9</b>	Number of university program(s) to cope with Covid-19 pandemic	100*	
<b>ED10</b>	Number of sustainability community services project organized and/or involving students	100*	
<b>ED11</b>	Number of sustainability-related startups	100*	
	<b>Total</b>	<b>1800</b>	