

# World University Rankings:

Uses and misuses, legitimacy, schemas and methodologies

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Durban, South Africa  
November 2018

Rankings play a role in informing the decision making process of prospective students, partners and governments before they engage the institution for their services

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#### WHY ARE RANKINGS IMPORTANT



**Governments** use them as a way to fund specific projects, initiatives and fund scholarships (e.g. Russia, Chile, China and Brazil)



Institutions use rankings to **choose partner institutions** for student mobility, academic exchanges, research collaboration and institutional agreements



Students (particularly international students) use rankings to **choose institutions for study**



Rankings measure different things (e.g. reputation, research impact and 'world class' status) and **appeal to different audiences**



Rankings may **influence employment decisions** for some individuals (e.g. top researchers and senior academics)



Rankings are increasingly being used as a tool for **transparency** and **accountability**

# Rankings have had a pervasive effect on universities

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- Accelerated mission creep / shifted institutional identity



- Universities turned away from community engagement



- Turned upside down local, domestic and national regional sense



- Common purpose and consensus of institutional 'collegiality' (if it ever existed)



- Measuring some things and not necessarily what matters

# Ways in which universities have legitimised universities

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- Provided input (i.e. complied and satisfied with the annual data requirements required to rank universities)



- Promoted the results (i.e. highlight where they stand in the rankings) because such results are relevant to highlight perceived reputation, esteem and impact to attract students, academic talent and funding



- Supported the range of related products and services they promote and deliver globally (data analytics, conferences, marketing and branding consultancies).

# Through the lens of universities key strategic actors, global rankings have gained legitimacy in that

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- Governments (the state) recognise and promote the standing of their national universities in the global rankings; provide financial incentives for universities to appear in these rankings; grant scholarships and financial support for students to study abroad in institutions recognised in the top of their study choices.



- The media, enterprise and industry groups disseminate and recognise the results of global rankings as instruments of quality, robustness and objectivity when these are not



- Civil society has succumbed to the perils and influence of the collective response of strategic actors to the growing influence of global rankings.

## Possibilities for actions: KPIs, Benchmarking and Rankings will not go away






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- How a South African / African performance measurement regime may look like?
- Why, what / what not to measure ?
- What dimensions to consider?

# Ranking criteria for the major and research-focused schemas\*

## RANKING CRITERIA

		Dimensions / Institution input **	Reputation (survey)	Citations	Faculty to student ratio	Prizes and awards	Highly cited researchers	Research output / Publications	Bibliometric (measures)
MAJOR RANKING SCHEMA		5 dimensions: 2 based on survey / institutional input	✓	✓	✓				
		6 dimensions: Focus on award and recognition / No input				✓	✓	✓	
		4 pillars: Focus on reputation and elite / Institutional input	✓	✓				✓	
BIBLIOMETRIC (RESEARCH-FOCUSED) RANKING SCHEMA		2 dimensions research intensity across 22 metrics / No input							✓
		Specialised ranking focus on 68 Science-related publications							✓

\* None of the ranking schemas measure student experience.

\*\* QS and THE collect data from institutions about student and academic staff (in full-time equivalence) and revenue. Data checked against government statistics

# Tiers of major ranking schemas and the differences between them

## MAJOR RANKING SCHEMAS



- Published annually since 2004 by QS (Quacquarelli Simmonds), United Kingdom
- Ranks the world's top 980 universities
- 50% of score relies on academic and employer reputation surveys
- Seen as the preferred ranking by international students from the Asia Pacific region\*



- Published annually since 2003 by Shanghai Jiao Tong University, China
- Known as the Academic Ranking of World Universities (ARWU)
- World's top 500 universities – expanded for the first time by 300 to 800 in 2017
- Relies entirely on third party data, and emphasises standing for elite, well endowed and research intensive universities



- Published annually since 2010 by Times Higher Education, United Kingdom
- Published in conjunction with QS between 2004 and 2009
- World's top 1000 universities
- 32% of institutional score relies on an academic reputation survey and 30% is for citations



# Tiers of bibliometric focused rankings and the differences between them

## RESEARCH ORIENTED RANKING SCHEMAS



- First published in 2008 and covered the 500 largest and most research intensive universities in Europe and worldwide. Produced by Center for Science and Technology at Leiden University, Netherlands
- Ranks the world's top 902 universities
- Relies entirely on bibliometric data – sourced from Web of Science (Clarivate)
- Derives a set of impact and collaboration measures but it does not have an overall rank



- Published annually since 2013 by Springer Nature
- Ranks the world's top 500 universities
- A specialised ranking on outputs from 68 top leading journals

### Highly Cited Researchers



- First published in 2001 by Thomson Reuters. The 2001 list remained in use until 2015, when a new list was produced. In 2016 a new listing was produced and updates will continue to be produced annually
- While it is not strictly a ranking, it contains a list of the world's top 1% of researchers in their field of endeavour from under 900 universities
- It is an influential factor for inclusion in ARWU



- First published in 2007 by the Higher Education Evaluation and Accreditation Council of Taiwan (HEEACT) and is now published by the National University of Taiwan
- Ranks the world's top 500 universities, in 6 field and 14 subject rankings
- This ranking system is designed to evaluate and compare research universities' achievements in scientific research by using objective indicators
- The ranking uses data from the Essential Sciences Indicators (Clarivate).

# Tiers of other rankings and the differences between them

## OTHER RANKING SCHEMAS



- First published in 2009 and covers about 3,000 higher education institutions worldwide.
- Produced by SCImago Research Group in Madrid, Spain
- Ranks the world's top 700 universities from 49 countries
- It is a science evaluation resource to assess worldwide universities and research-focused institutions



- Published twice a year since 2004 by Cybermetrics Lab (Spanish National Research Council, CSIC)
- The world's largest ranking of academic institutions – more than 19,000 globally
- It focuses on the web presence of institutions and extent to which documents are widely available online



- First published in 2014 by RUR Rankings Agency based in Moscow, using data from Clarivate
- Ranks the world's top 850 universities from 80 countries
- Methodology mirrors that of Times Higher Education (THE)



- First published in 2014 by ranking the world's top 400 universities and has expanded to include the world's top 1,000
- Produced by U.S. News & World Report, publisher of the US Best University and Colleges Guide since the 1980s
- Sources bibliometric and institutional profile data from Clarivate

There is not an overall university rank, instead U-Multirank provides a platform to highlight particular areas of strength, speciality and differentiation

## KEY OBSERVATIONS



### About this ranking

- Published annually since 2014 by a consortium of higher education centres in Europe
- The first ranking featured 850 institutions from more than 70 countries
- U-Multirank is a multi-dimensional international ranking of higher education institutions
- It compares performance of institutions in five dimensions: Teaching and learning; Research; Knowledge transfer; International orientation and regional engagement.
- 23 universities from Africa are ranked; of which 6 are from South Africa

<a href="#">University of Cape Town</a>	ZA
<a href="#">Durban University of Technology</a>	ZA
<a href="#">University of KwaZulu-Natal</a>	ZA
<a href="#">Stellenbosch University</a>	ZA
<a href="#">University of Pretoria</a>	ZA
<a href="#">University of the Witwatersrand</a>	ZA

# There is not an overall university rank, instead U-Multirank provides a platform to highlight particular areas of strength, speciality and differentiation

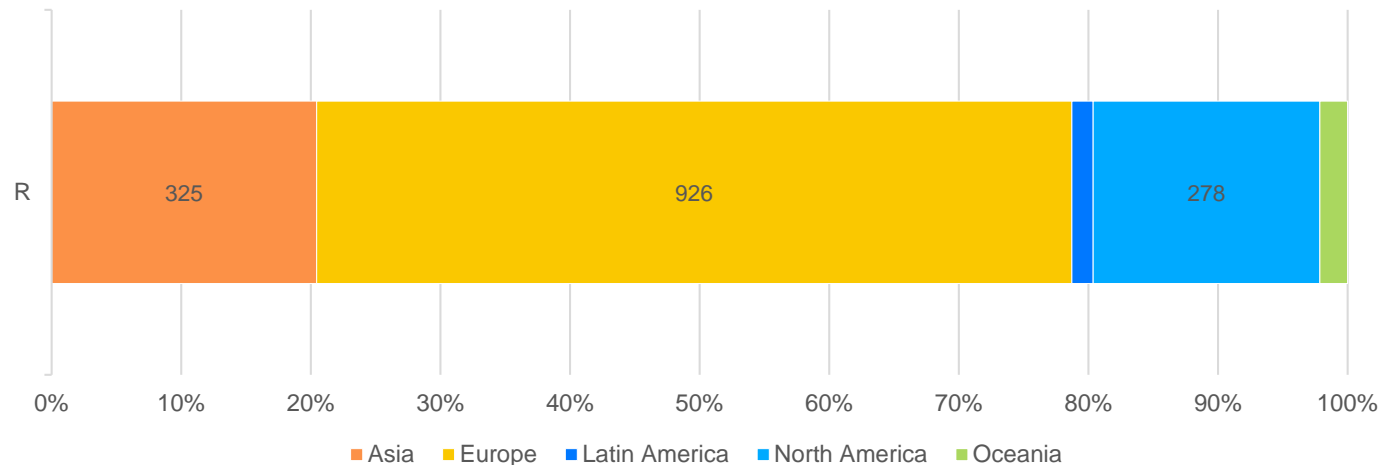
## KEY OBSERVATIONS



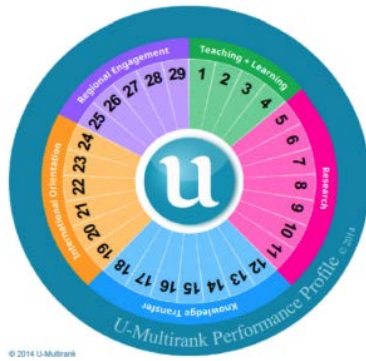
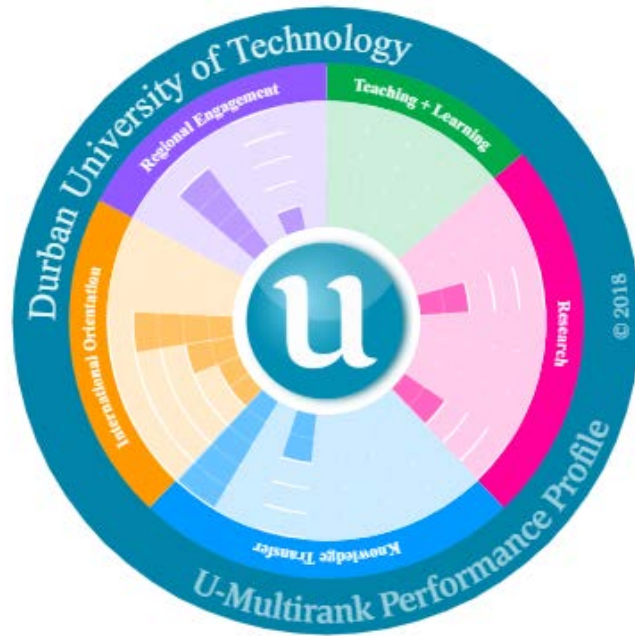
### About this ranking

- Published annually since 2004 by QS (Quacquarelli Simmonds), United Kingdom
- Ranks the world's

U-Multirank Continental Dispersion



# U-Multirank has the highest number of indicator of all ranking schemas



## TEACHING & LEARNING

- 1 Bachelor graduation rate
- 2 Masters graduation rate
- 3 Graduating on time (Bachelors)
- 4 Graduating on time (Masters)

## RESEARCH

- 5 External research income
- 6 Research publications (size-normalized)
- 7 Art related output
- 8 Citation rate
- 9 Topcited publications
- 10 Interdisciplinary publications
- 11 Post-doc positions

## KNOWLEDGE TRANSFER

- 12 Income from private sources
- 13 Co-publications with industrial partners
- 14 Patents awarded (size-normalized)
- 15 Industry co-patents
- 16 Spin-offs
- 17 Publications cited in patents
- 18 Income from continuous professional development

## INTERNATIONAL ORIENTATION

- 19 Foreign language bachelor programmes
- 20 Foreign language master programmes
- 21 Student mobility
- 22 International academic staff
- 23 International doctorate degrees
- 24 International joint publications

## REGIONAL ENGAGEMENT

- 25 Bachelor graduates working in the region
- 26 Student internships in the region
- 27 Regional joint publications
- 28 Income from regional sources
- 29 Master graduates working in the region

QS rankings started in 2004 in partnership with THE and has successfully expanded to include regional and subject-specific rankings

## KEY OBSERVATIONS



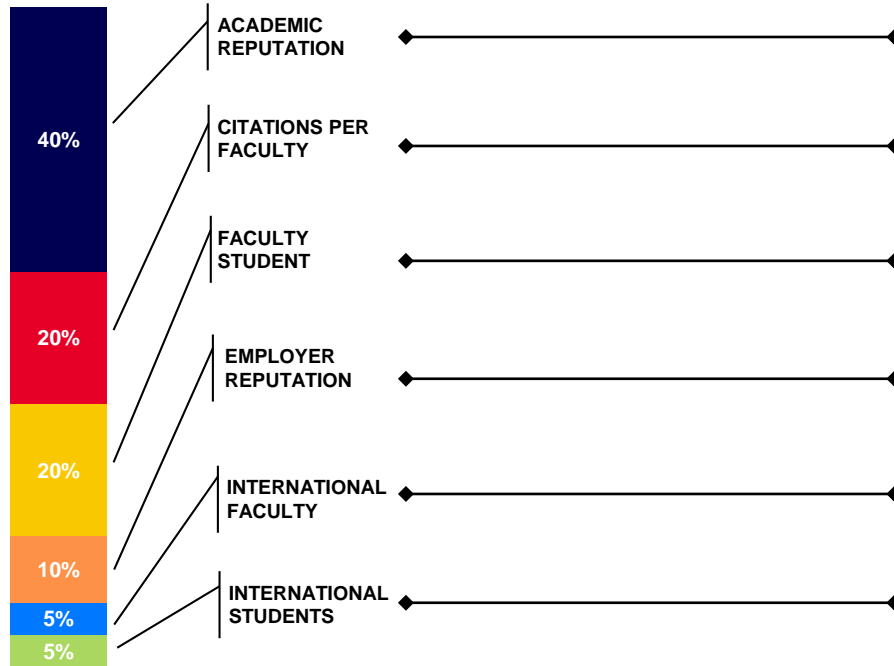
### About this ranking

- Published annually since 2004 by QS (Quacquarelli Simmonds), United Kingdom
- Ranks the world's top 1,021 universities
- 50% of score relies on academic and employer reputation surveys
- Seen as the preferred ranking by international students from the Asia Pacific region
- Universities from 85 countries are included in this ranking
- 10 African universities are included – of which 9 are from South Africa

RANK	RANK		CODE
200=	191	University of Cape Town	ZA
381=	364=	University of The Witwatersrand	ZA
405=	361=	Stellenbosch University	ZA
551-560	601-650	University of Johannesburg	ZA
561-570	501-550	University of Pretoria	ZA
751-800	701-750	University of Kwazulu-Natal	ZA
801-1000	801-1000	North-West University	ZA
801-1000	701-750	Rhodes University	ZA
801-1000	801-1000	University of the Western Cape	ZA

QS has relatively few metrics compared to other ranking schemas but it is significantly reliant on reputation surveys – subject of considerable criticism

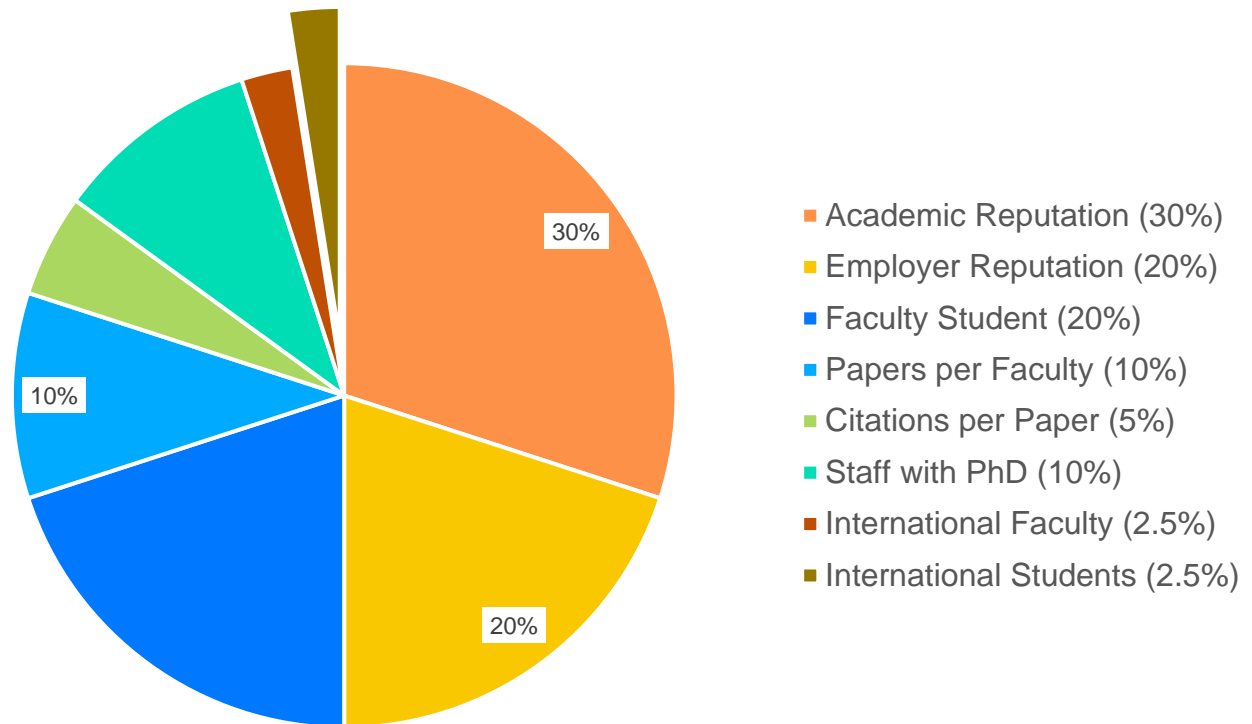
## QS METHODOLOGY



Criteria	Data input
Academic peer review	Annual peer survey (80,000+ responses globally)
Employer review	Annual survey (40,000+ responses globally)
Faculty student ratio	Annual data
Citations per faculty	Average of 6 years Scopus data – e.g. 2012-17 (weighted for size of institution)
International faculty	International academic staff/ all academic staff
International students	International students/ all students

## QS BRICS Rankings: Regional rankings are gaining greater prominence.

QS BRICS RANKINGS METHODOLOGY – USES SAME DATA – CALIBRATED METHODOLOGY





# South Africa's highest ranked institution stands 22<sup>nd</sup> in the 2019 edition of QS BRICS

## STANDING OF SOUTH AFRICAN UNIVERSITIES IN QS BRICS

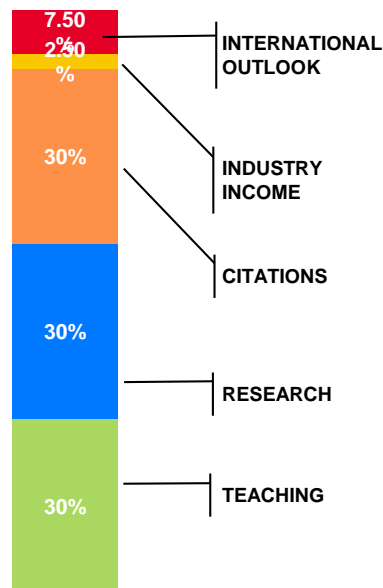
2019	2018	Institution Name
RANK	RANK	
22	19	UNIVERSITY OF CAPE TOWN
40	36	UNIVERSITY OF THE WITWATERSRAND
45	38	UNIVERSITY OF PRETORIA
51	47=	STELLENBOSCH UNIVERSITY
61	58	UNIVERSITY OF JOHANNESBURG
85	80	UNIVERSITY OF KWAZULU-NATAL
124	138=	RHODES UNIVERSITY
139=	146	UNIVERSITY OF THE WESTERN CAPE
170=	181-190	NORTH-WEST UNIVERSITY
180	161-170	UNIVERSITY OF THE FREE STATE
211-220	191-200	NELSON MANDELA METROPOLITAN UNIVERSITY
281-290	251-300	UNIVERSITY OF FORT HARE
351-400	301-350	UNIVERSITY OF LIMPOPO

# Reputation is key driver to feature in THE: 32% of institutional score relies on an academic reputation survey and 30% is for citations

## THE RANKING BREAKDOWN



FIRST



Criteria	Indicator
Teaching	Annual academic reputation survey
	Staff/ student ratio
	Ratio of doctorates to bachelor's students awarded
	Doctorates awarded/ academic FTE
	Institutional income / academic staff numbers
Research	Annual academic reputation survey
	Research income
	Number of papers published in journals indexed by Thomson Reuters per academic
Citations	Citations per paper
Industry	Research income earned from industry/ academic staff FTE
International mix	Internationally co-authored papers
	Ratio of international/ domestic staff
	Ratio of international/ domestic students

# University of Cape Town ranks 171<sup>st</sup> in THE – which has been published since 2010

## KEY OBSERVATIONS



### About this ranking

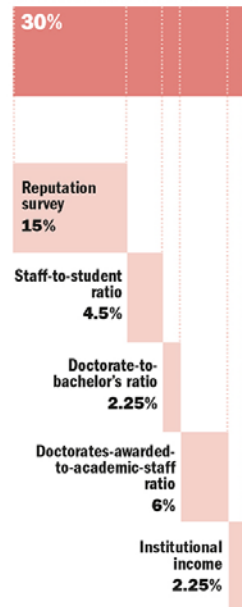
- Published annually since 2010 by Times Higher Education, United Kingdom
- Published in conjunction with QS between 2004 and 2009
- World's top 1,200 universities
- 32% of institutional score relies on an academic reputation survey and 30% is for citations
- Universities from 86 different countries are included
- 16 African universities are included, of which 9 are from South Africa

Institution	Rank 201	Rank 201
University of Cape Town	171	156
University of the Witwatersrand	251–300	201–250
Stellenbosch University	351–400	301–350
University of KwaZulu-Natal	401–500	401–500
University of Johannesburg	601–800	601–800
University of Pretoria	601–800	601–800
University of the Western Cape	601–800	601–800
Tshwane University of Technology		801–1000
University of South Africa	801–1000	1001+

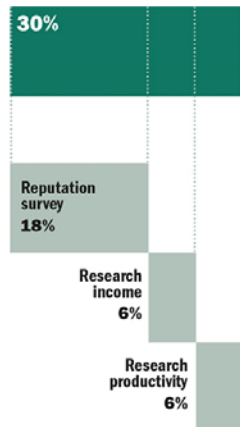
# THE Emerging Economies University Rankings 2018 (5<sup>th</sup> edition)

THIS RANKING USES SAME METHODOLOGY AS THE WUR BUT WEIGHTINGS ARE CALLIBRATED

## Teaching (the learning environment)



## Research (volume, income and reputation)



## Citations (research influence)



## International outlook (staff, students, research)



International-to-domestic-student ratio  
3.3%

International-to-domestic-staff ratio  
3.3%

International collaboration  
3.4%

## Industry income (knowledge transfer)



350 universities from X countries, 6 are from South Africa

9

University of Cape Town

📍 South Africa

12

University of the Witwatersrand

📍 South Africa

[Explore](#)

38

Stellenbosch University

📍 South Africa

=41

University of KwaZulu-Natal

📍 South Africa

## Exclusions

- Universities are excluded if they do not teach undergraduates or if their research output amounted to fewer than 1,000 articles between 2012 and 2016 (and a minimum of 150 a year).
- Universities can also be excluded if 80 per cent or more of their activity is exclusively in one of our 11 subject areas.

ARWU started as an instrument to measure relative progress of Chinese universities from a global perspective. It favours elite, well endowed and research intensive institutions

## KEY OBSERVATIONS



### About this ranking

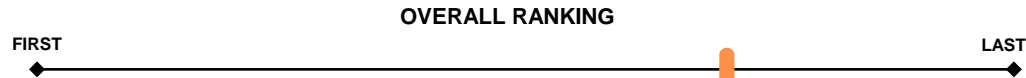
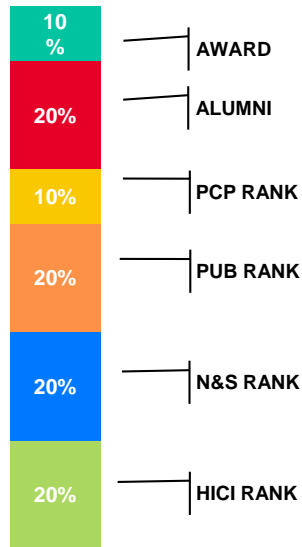
- Published annually since 2003 by Shanghai Jiao Tong University, China
  - Known as the Academic Ranking of World Universities (ARWU)
  - World's top 500 universities – expanded for the first time by 300 to 800 in 2017
  - In 2018 published details for the world's top 500 and candidate institutions (i.e. those ranged 501-1000)
  - Relies entirely on third party data, and emphasises standing for elite, well endowed and research intensive universities
  - ARWU is considered the most prestigious and aspirational ranking schemas.
- 
- Universities from 44 countries are included in the world's top 500
  - 5 African institutions are included in the top 500 (of which all are from South Africa).
  - 5 South African universities are ranked 501-100. Uganda's Makerere University ranks 901-1000.

Top 500	501-1000	Methodology
World Rank	Institution*	
201-300	University of the Witwatersrand	
301-400	University of Cape Town	
401-500	Stellenbosch University	
401-500	University of Pretoria	

Top 500	501-1000	Methodology	S
World Rank	Institution*		
501-600	University of KwaZulu-Natal		
601-700	University of Johannesburg		
701-800	North-West University		
701-800	University of South Africa		

Metrics have remained unchanged. Volatility was introduced by annual changes in highly cited researchers list

## ARWU RANKING BREAKDOWN



Criteria	Indicator
Quality of education (10%)	Alumni winning Nobel Prizes and Fields Medals
Quality of faculty (40%)	Staff winning Nobel Prizes and Fields Medals
	Highly cited authors in 21 broad subject areas
Research output (40%)	Papers in Nature and Science
	Papers indexed in Science Citation Index - expanded and Social Science Citation Index (Thomson Reuters)
Productivity - Per capita performance (10%)	Based on 15 indicators incl: staff and student profile/ ratios, institutional, public sector and research income

# Leiden provides leading insights about the world's top research intensive universities

## KEY OBSERVATIONS



### About Leiden

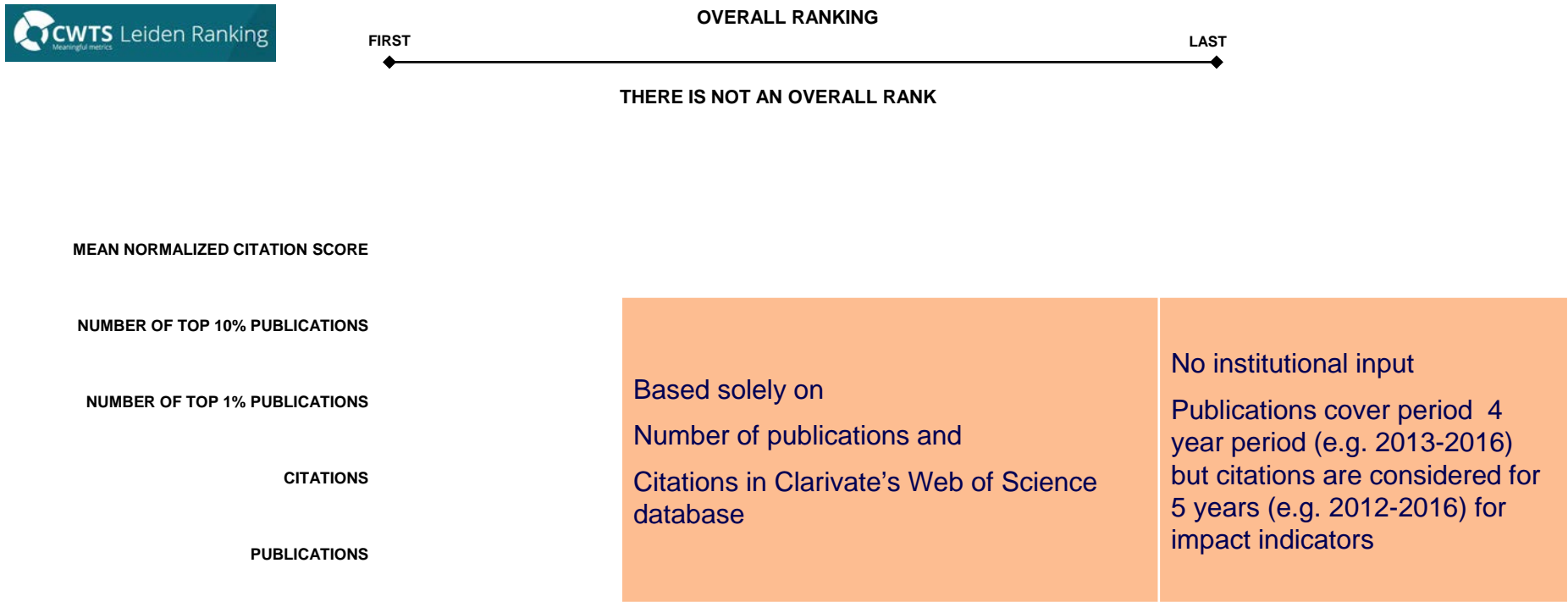
- First published in 2008 and covered the 500 largest and most research intensive universities in Europe and worldwide. Produced by Center for Science and Technology at Leiden University, Netherlands.
- Ranks the world's top 938 universities in 2018 from 55 different countries.
- Relies entirely on bibliometric data – sourced from Web of Science (Clarivate). Covers publication in the period 2013-2016 and citations are counted until the end of 2017.
- Derives a set of impact and collaboration measures but it does not have an overall rank.

Institution	Papers
University of Cape Town	3,035
University of KwaZulu-Natal	2,904
University of the Witwatersrand	2,526
University of Pretoria	2,520
Stellenbosch University	2,450
North-West University	1,160
University of Johannesburg	1,103

\* Figures updated to reflect Leiden's revised June 2018 results

# Leiden Ranking contains two categories – Impact and Collaboration

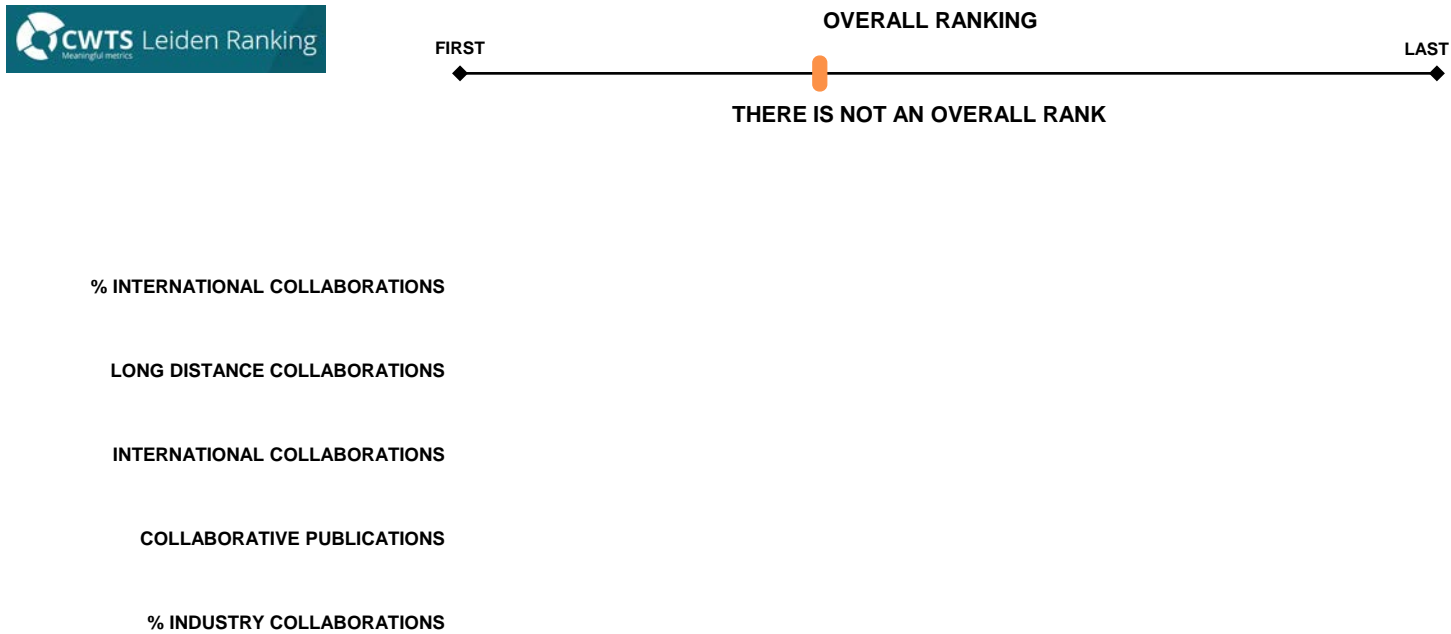
## LEIDEN RANKING BREAKDOWN – CATEGORY: IMPACT





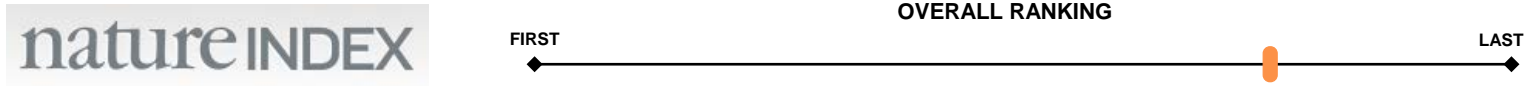
# Leiden: Collaboration

## LEIDEN RANKING BREAKDOWN – CATEGORY: COLLABORATION



The Nature Index has been produced for the past six years. It is a specialized ranking

## KEY OBSERVATIONS



### About this index

- This is a specialised ranking, produced by Nature Research. Unlike other schemes, provides coverage to only one specific dimension for the world's top 500 universities
- The Nature Index is a database of author affiliation information collated from research articles published in a selected group of 82 high-quality science journals. The index covers the two journals (Nature and Science) pivotal for ranking in the Academic Ranking of World Universities (ARWU)
- Universities from 34 different countries are included. None is from South Africa.

# Scimago is a bibliometric based rank

## KEY OBSERVATIONS



### About this ranking

- First published in 2009 and covers about 6,000 higher education institutions worldwide.
- Produced by SCimago Research Group in Madrid, Spain
- Ranks the world's top 5,637 institutions from over 100 countries
- It is a science evaluation resource to assess worldwide universities and research-focused institutions
- 144 institutions from Africa are included. 28 are from South Africa (20 are higher education).

# A ranking which provides useful insights into research & innovation capacity

## SCIMAGO RANKING BREAKDOWN

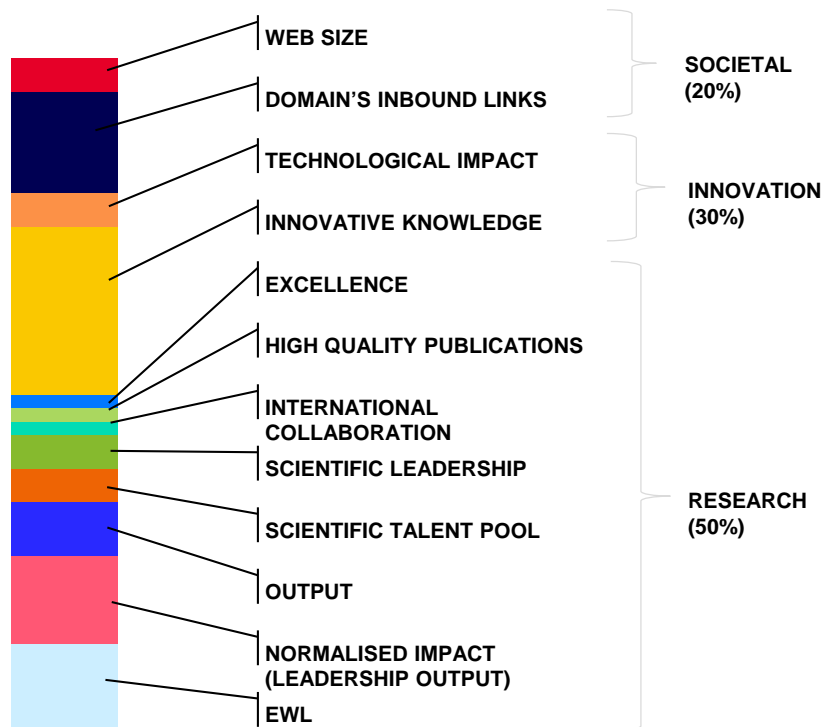


FIRST

OVERALL RANKING

LAST

459<sup>th</sup>  
432<sup>nd</sup> out of  
10,000+



World rank	Institution
428	University of Cape Town
	University of the Witwatersrand, Johannesburg
520	
521	University of Pretoria
522	Stellenbosch University
552	University of KwaZulu-Natal
635	University of Johannesburg
	North-West University, Noordwes-Universiteit
641	
649	Rhodes University
655	University of the Western Cape
665	University of the Free State
684	Tshwane University of Technology
688	University of South Africa
694	Durban University of Technology
695	University of Zululand
711	Cape Peninsula University of Technology
718	University of Fort Hare
732	Nelson Mandela Metropolitan University
734	University of Venda
742	Vaal University of Technology
744	University of Limpopo

# A ranking which ascertains the web presence and open access of institutions

## KEY OBSERVATIONS

### RANKING WEB OF UNIVERSITIES

FIRST



#### About this index

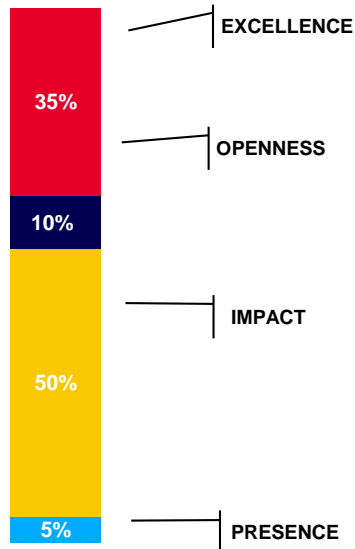
- The aim of this ranking is to promote academic web presence and support open access initiatives
- It draws data from other web search engines to derive a set of metrics to measure impact, which accounts for 50% of the index, including number of pages, pdf files and items in Google Scholar database, while the visibility takes into account the external in-links received by the repository (the other 50%)
- This ranking has the most extensive coverage of all ranking schemes and highlights that the importance of the web as the showcase for the university.
- 23 South African institutions are included

Rank	Institution
234	University of Cape Town
422	University of the Witwatersrand
495	University of Pretoria
557	Stellenbosch University
584	University of Kwazulu Natal
593	University of Johannesburg
1069	Rhodes University
1106	University of the Western Cape
1138	North West University
1401	University of the Free State
1454	University of South Africa
1680	Durban University of Technology
1891	Tshwane University of Technology
2380	University of Venda
2488	Cape Peninsula University of Technology
2611	University of Fort Hare
2839	Nelson Mandela University
3100	University of Limpopo
3306	Central University of Technology
4198	Mangosuthu University of Technology
4201	Vaal University of Technology
4216	University of Zululand
4440	Walter Sisulu University

Webometrics is not necessarily a ranking. It is about the visibility of an institution on the web

## WEBOMETRICS RANKING BREAKDOWN

### RANKING WEB OF UNIVERSITIES



INDICATORS	DESCRIPTION	SOURCE
<b>PRESENCE</b>	Size (number of webpages) of the main webdomain of the institution. It includes all the subdomains sharing the same (central or main) webdomain and all the file types including rich files like pdf documents	<i>Google</i>
<b>VISIBILITY</b>	Number of external networks (subnets) originating backlinks to the institution's webpages After normalization, the average value between the two sources is selected	<i>Ahrefs Majestic</i>
<b>TRANSPARENCY (or OPENNESS)</b>	Number of citations from Top authors according to the source	<i>Google Scholar Citations</i>
<b>EXCELLENCE (or SCHOLARS)</b>	Number of papers amongst the top 10% most cited in 26 disciplines Data for the five year period (2012-2016)	<i>Scimago</i>

# A Russian ranking schema that draws data from Clarivate and reflects THE WUR standings score.

## KEY OBSERVATIONS



### About RUR

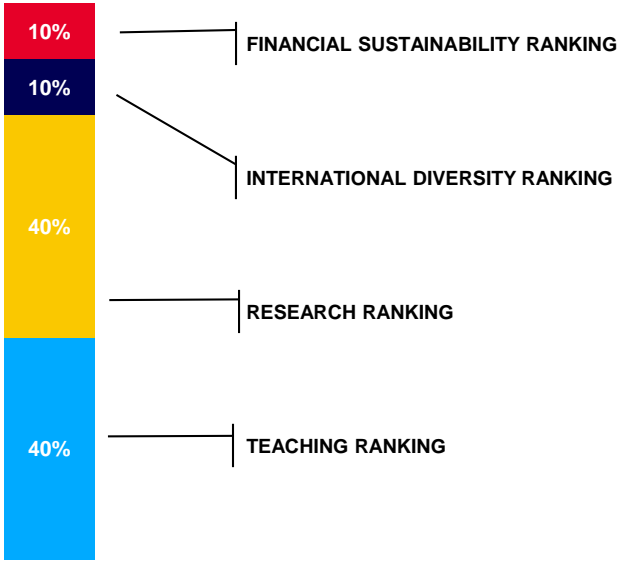
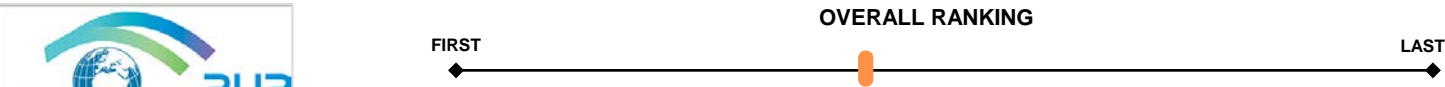
- First published in 2014 by RUR Rankings Agency based in Moscow, using data from Clarivate
- Ranks the world's top 783 universities from 73 countries
- Methodology mirrors that of Times Higher Education (THE). It comprises 20 indicators across four key areas of activity: Teaching (40%), Research (40%), International diversity (10%) and Financial sustainability (10%). This is a ranking that receives very little media coverage compared to the major ranking schemas and research-focused schemas.

### Highlights

- 7 universities from South Africa are included;

# A Russian ranking schema that draws data from Clarivate and reflects THE WUR standings score.

## ROUND RANKING BREAKDOWN



Teaching indicators	Research indicators
Academic staff per students	Citations per academic and research staff
Academic staff per bachelor degrees	Doctoral degrees per admitted PhD
Doctoral degrees per academic staff	Normalized citation impact
Doctoral degrees per bachelor degrees	Papers per Academic and research staff
Teaching reputation	Research reputation
International Diversity indicators	Financial Sustainability indicators
International academic staff	Institutional income per academic staff
International students	Institutional income per students
International co-authored papers	Papers per million research income
International reputation	Research income per Academic staff
International level	Research income per institutional income

\* UTS is not ranked



2014 and has moved up 225 places.

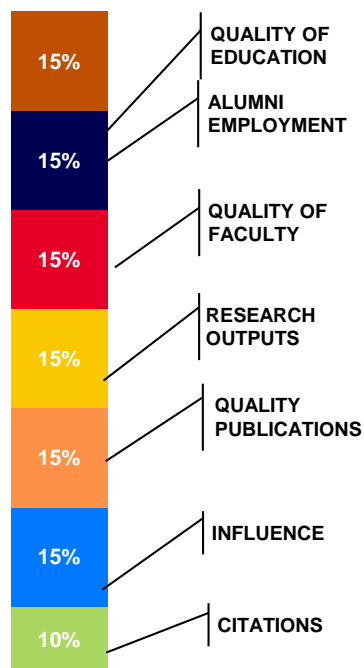
## KEY OBSERVATIONS



About this ranking

The Center for World University Rankings (CWUR) has been published since 2012 and uses information that is publicly available

## CWUR RANKING BREAKDOWN



# A young ranking schema that has little global visibility – bears similarity to THE WUR

## BEST GLOBAL UNIVERSITIES RANKING BREAKDOWN

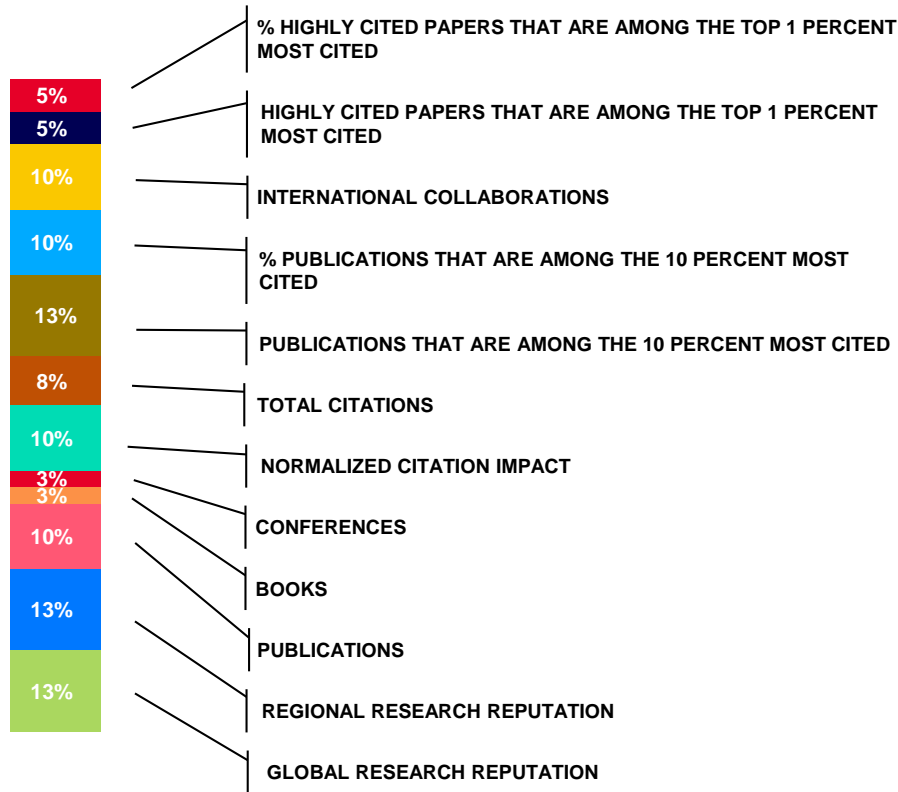


### Highlights

- First published in 2014 by ranking the world's top 400 universities and has expanded to include the world's top 1,000
- Produced by U.S. News & World Report, publisher of the US Best University and Colleges Guide since the 1980s
- Sources bibliometric and institutional profile data from Clarivate

Ranking heavily relies on bibliometric measures (citations weigh 50% and publications 25%). Reputation survey is worth 25% of overall score

BEST GLOBAL RANKING BREAKDOWN



## URAP is yet another ranking



Indicator	Objective	Coverage	Source
<b>Article (21%)</b>	Current Scientific Productivity	2016	InCites
<b>Citation</b>	Research Impact	2012-2016	InCites
<b>Total Document</b>	Scientific Productivity	2012-2016	InCites
<b>Article Impact Total</b>	Research Quality	2012-2016	InCites
<b>Citation Impact Total</b>	Research Quality	2012-2016	InCites
<b>International Collaboration</b>	International Acceptance	2012-2016	InCites

## University Ranking by Academic Performance

