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**ACADEMIC RANKING OF WORLD UNIVERSITIES 2017**

**Abstract.** In this paper the Academic Ranking of World Universities is considered. The publication of the Institute of Higher Education, Shanghai Jiao Tong University, Academic Ranking of World Universities 2017, ARWU 2017 is analyzed. From 2017, those universities ranked between 501 and 800 are also published as ARWU World Top 500 Candidates. The ARWU 2017 ranking of the University of Belgrade is illustrated. The ARWU uses six objective indicators to rank world universities.

**Keywords.** Academic Ranking of World Universities 2017, Higher Education, Institute of Higher Education, Shanghai Jiao Tong University, University of Belgrade, Candidates, Six indicators.

**1. Introduction**

The Academic Ranking of World Universities – ARWU was first published in June 2003 by the Center for World-Class Universities and the Institute of Higher Education of Shanghai Jiao Tong University [1]. The ARWU uses six objective indicators (Table 1) to rank world universities, including the number of alumni and staff winning Nobel Prizes and Fields Medals, number of highly cited researchers [2] selected by Thomson Reuters, number of articles published in journals Nature and Science [3-13], number of articles indexed in Science Citation Index (including Expanded and Social Sciences Citation Index), and per capita performance of an university.

**Indicators and Weights for ARWU**

Criteria	Indicator	Code	Weight
Quality of Education	Alumni of an institution winning Nobel Prizes and Fields Medals	Alumni	10%
	Staff of an institution winning Nobel Prizes and Fields Medals	Award	20%
Quality of Faculty	Highly cited researchers in 21 broad subject categories	HiCi	20%
	Papers published in Nature and Science*	N&S	20%
Research Output	Papers indexed in Science Citation Index-expanded and Social Science Citation Index	PUB	20%
Per Capita Performance	Per capita academic performance of an institution	PCP	10%
Total			100%

Table 1 Indicators and Weights for ARWU.

Definition of Indicators:

Alumni: The total number of the alumni of an institution winning Nobel Prizes and Fields Medals.

Award: The total number of the staff of an institution winning Nobel Prizes in Physics, Chemistry, Medicine and Economics and Fields Medal in Mathematics.

HiCi: The number of Highly Cited Researchers selected by Clarivate Analytics. The Highly Cited Researchers list issued in November 2016.

N&S: The number of papers published in Nature and Science between 2012 and 2016.

PUB: Total number of papers indexed in Science Citation Index-Expanded and Social Science Citation Index in 2016.

PCP: The weighted scores of the above five indicators divided by the number of full-time equivalent academic staff.

## 2. Shanghai World rank list of the top 20 universities in 2017

Table 2 presents the Shanghai World rank list of the top 20 universities in 2017 [10] (15. Aug. 2017):





















Top 500						
501-800						
Methodology						
Statistics						
World Rank	Institution*	By location		National Rank	Total Score	Score on Alumni ▼
		All				
1	Harvard University			1	100.0	100.0
2	Stanford University			2	76.5	44.5
3	University of Cambridge			1	70.9	81.4
4	Massachusetts Institute of Technology (MIT)			3	70.4	68.7
5	University of California, Berkeley			4	69.1	64.4
6	Princeton University			5	61.1	54.4
7	University of Oxford			2	60.1	50.8
8	Columbia University			6	58.8	62.8
9	California Institute of Technology			7	57.3	50.5
10	University of Chicago			8	53.9	59.2
11	Yale University			9	52.8	47.1
12	University of California, Los Angeles			10	52.5	29.2
13	University of Washington			11	50.3	20.9
14	Cornell University			12	49.6	43.1
15	University of California, San Diego			13	49.5	19.0
16	University College London			3	47.1	27.8
17	University of Pennsylvania			14	46.0	31.3
18	Johns Hopkins University			15	45.7	37.3
19	Swiss Federal Institute of Technology Zurich			1	44.1	29.2
20	Washington University in St. Louis			16	43.3	22.7

Table 2 Shanghai World rank list of the top 20 universities in 2017 (15. Aug. 2017)

More than 1200 universities are actually ranked by ARWU every year and the best 500 are published. From 2017, those universities ranked between 501 and 800 are also published as ARWU World Top 500 Candidates [14].

Data Sources are:

Nobel laureates

<http://nobelprize.org/>

Fields Medals

<http://www.mathunion.org/index.php?id=prizewinners>

Highly cited researchers

<http://www.highlycited.com/>

Papers published in Nature and Science

<http://www.webofscience.com/>

Articles indexed in Science Citation Index-Expanded and Social Science

Citation

Index

<http://www.webofscience.com/>

Others: Number of academic staff.

### 3. University of Belgrade on the Shanghai World rank list in 2017

The ARWU 2017 ranking of the University of Belgrade is given in .

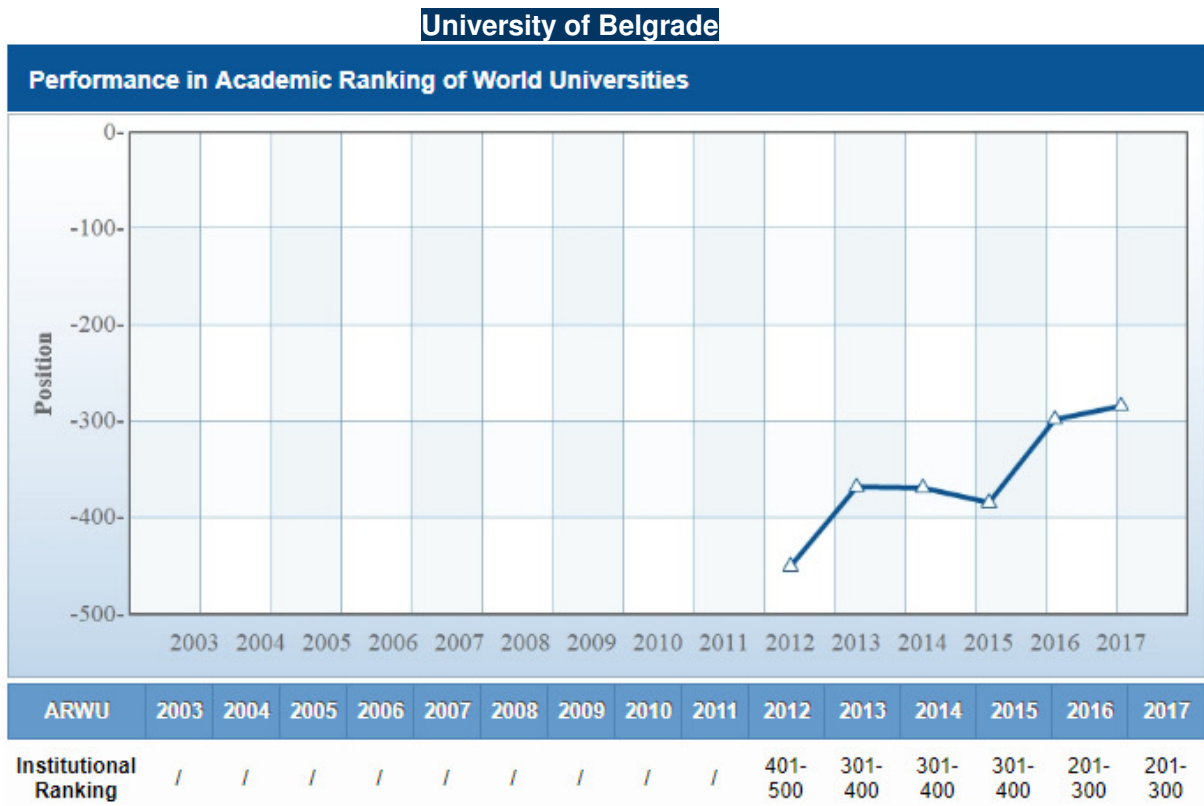


Figure 1 The ARWU 2017 ranking of the University of Belgrade

The ARWU 2017 position of the University of Belgrade, between 201-300, is the best position from the year 2012.

On the Shanghai Ranking's Global Ranking Academic Subjects 2017 [14], University of Belgrade are in the following positions:

### Natural Sciences

**Mathematics** **Physics** **Chemistry** **Earth Sciences** **Geography** **Ecology**

Mathematics: 201-300

Physics: 151-200

Chemistry: 301-400

### Engineering

**Mechanical Engineering** **Electrical & Electronic Engineering** **Automation & Control** **Telecommunication Engineering** **Instruments Science & Technology** **Biomedical Engineering** **Computer Science & Engineering** **Civil Engineering** **Chemical Engineering** **Materials Science & Engineering** **Nanoscience & Nanotechnology** **Energy Science & Engineering** **Environmental Science & Engineering** **Water Resources** **Food Science & Technology** **Biotechnology** **Aerospace Engineering** **Marine/Ocean Engineering** **Transportation Science & Technology** **Remote Sensing** **Mining & Mineral Engineering** **Metallurgical Engineering**

Food Science & Technology: 35.

Instruments Science & Technology: 201-300.

Computer Science & Engineering: 401-500.

Civil Engineering: 201-300.

Chemical Engineering: 151-200.

Materials Science & Engineering: 201-300.

Energy Science & Engineering: 201-300.

Environmental Science & Engineering: 401-500.

Metallurgical Engineering: 101-150.

### Life Sciences

**Biological Sciences** **Human Biological Sciences** **Agricultural Sciences** **Veterinary Sciences**

Agricultural Sciences: 201-300.

Biological Sciences: 301-400.

### Medical Sciences

**Clinical Medicine** **Public Health** **Dentistry & Oral Sciences** **Nursing** **Medical Technology** **Pharmacy & Pharmaceutical Sciences**

Clinical Medicine: 401-500.

Public Health: 201-300.

Dentistry & Oral Sciences: 151-200.

Pharmacy & Pharmaceutical Sciences: 151-200.

## Social Sciences

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Institutions within the same rank range are listed alphabetically.

## 4. Conclusions

In this paper the Academic Ranking of World Universities, ARWU indicators and weights are considered. The ARWU ranking of the top 20 World Universities is illustrated. University of Belgrade on the Shanghai World rank list ARWU in 2017 and Shanghai Ranking's Global Ranking Academic Subjects 2017, for University of Belgrade are given. The ARWU 2017 position of the University of Belgrade, between 201-300, is the best position from the year 2012.

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