

A Universidade do Porto no ShanghaiRanking's Global Ranking of Academic Subjects (GRAS) 2019

Universidade do Porto. Reitoria.
Gabinete de estudos estratégicos e melhoria contínua
4 de julho de 2019

Sumário

1. Metodologia do ShanghaiRanking's Global Ranking of Academic Subjects 2019	3
2. Evolução da Universidade do Porto no ShanghaiRanking's Global Ranking of Academic Subjects	10
3. As Universidades portuguesas no ShanghaiRanking's Global Ranking of Academic Subjects 2019	15
3.1 NATURAL SCIENCES.....	15
3.1.1 Mathematics.....	15
3.1.2 Physics.....	16
3.1.3 Chemistry	17
3.1.4 Earth Sciences	18
3.1.5 Geography	19
3.1.6 Ecology	20
3.1.7 Oceanography.....	21
3.1.8 Atmospheric Science.....	22
3.2 ENGINEERING	23
3.2.1 Mechanical Engineering	23
3.2.2 Electrical & Electronic Engineering.....	24
3.2.3 Automation & Control	25
3.2.4 Telecommunication Engineering	26
3.2.5 Instruments Science & Technology	27
3.2.6 Biomedical Engineering.....	28
3.2.7 Computer Science & Engineering	29
3.2.8 Civil Engineering	30
3.2.9 Chemical Engineering	31
3.2.10 Materials Science & Engineering	32
3.2.11 Nanoscience & Nanotechnology	33
3.2.12 Energy Science & Engineering.....	34
3.2.13 Environmental Science & Engineering	35
3.2.14 Water Resources.....	36
3.2.15 Food Science & Technology	36
3.2.16 Biotechnology.....	37
3.2.17 Aerospace Engineering	37

3.2.18 Marine/Ocean Engineering.....	38
3.2.19 Transportation Science & Technology.....	38
3.2.20 Remote Sensing.....	39
3.2.21 Mining & Mineral Engineering	39
3.2.22 Metallurgical Engineering	39
3.3 LIFE SCIENCES.....	40
3.3.1 Biological Sciences	40
3.3.2 Human Biological Sciences	41
3.3.3 Agricultural Sciences.....	42
3.3.4 Veterinary Sciences	43
3.4 MEDICAL SCIENCES	44
3.4.1 Clinical Medicine	44
3.4.2 Public Health	45
3.4.3 Dentistry & Oral Sciences	45
3.4.4 Nursing.....	46
3.4.5 Medical Technology	46
3.4.6 Pharmacy & Pharmaceutical Sciences.....	47
3.5 SOCIAL SCIENCES	48
3.5.1 Economics.....	48
3.5.2 Statistics.....	48
3.5.3 Law.....	49
3.5.4 Political Sciences	49
3.5.5 Sociology.....	50
3.5.6 Education	50
3.5.7 Communication	51
3.5.8 Psychology	52
3.5.9 Business Administration	53
3.5.10 Finance	53
3.5.11 Management	54
3.5.12 Public Administration.....	54
3.5.13 Hospitality & Tourism Management.....	55
3.5.14 Library & Information Science	55
3.6 RESUMO	56
4. Anexos	57
4.1 Mapping between Web of Science categories and 54 academic subjects	57
4.2 ShanghaiRanking Academic Excellence Survey 2019 Top Journals & Conferences	61
4.3 ShanghaiRanking Academic Excellence Survey 2019 Top Award	65

A Universidade do Porto no ShanghaiRanking's Global Ranking of Academic Subjects (GRAS) 2019

<http://www.shanghairanking.com/Shanghairanking-Subject-Rankings/index.html>

1. Metodologia do ShanghaiRanking's Global Ranking of Academic Subjects 2019

"Methodology for ShanghaiRanking's Global Ranking of Academic Subjects 2019"

Ranking Subjects

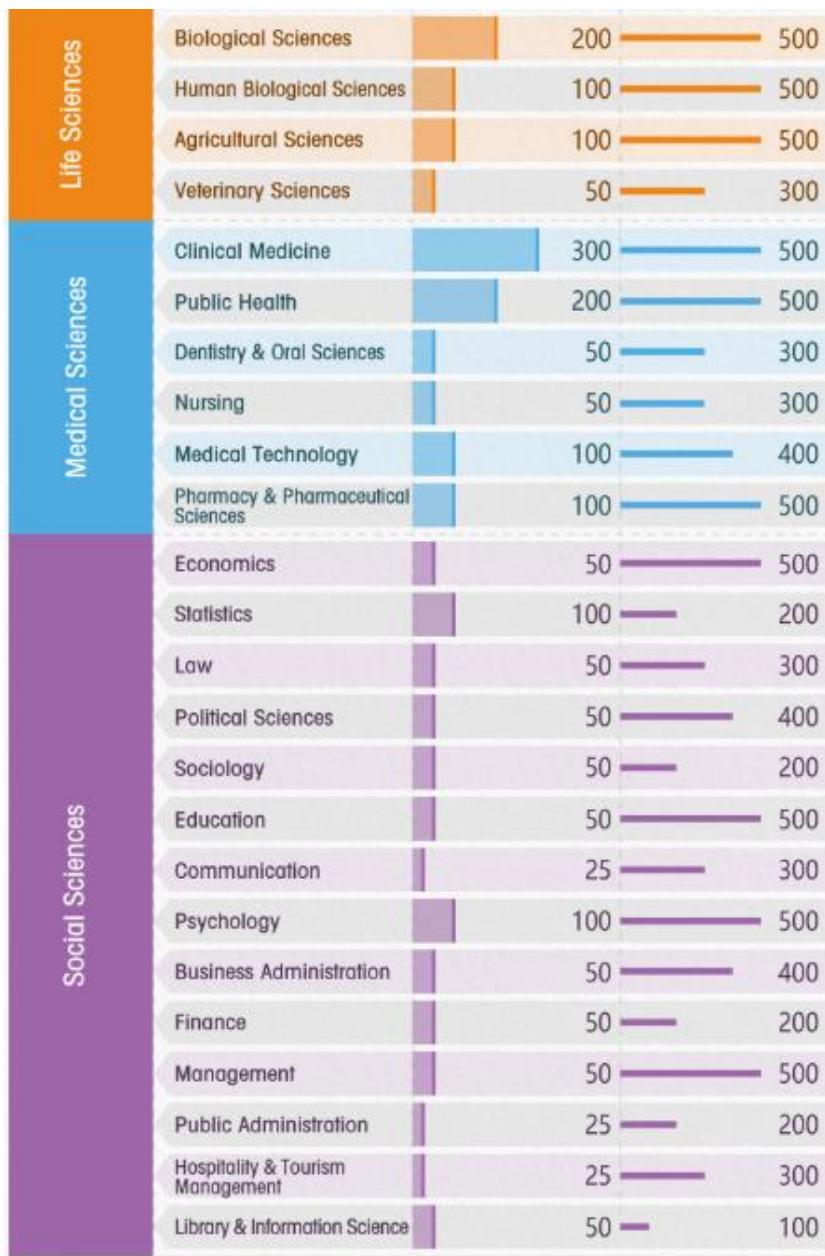
In 2019 Global Ranking of Academic Subjects, institutions are ranked in 54 subjects across Natural Sciences, Engineering, Life Sciences, Medical Sciences, and Social Sciences.

 2019 SHANGHAIRANKING'S GLOBAL RANKING OF ACADEMIC SUBJECTS	
Ranking Subjects	
Natural Sciences	Engineering
Mathematics	Physics
Chemistry	Earth Sciences
Geography	Ecology
Oceanography	Atmospheric Science
Life Sciences	
Biological Sciences	Mechanical Engineering
Human Biological Sciences	Electrical & Electronic Engineering
Agricultural Sciences	Automation & Control
Veterinary Sciences	Instruments Science & Technology
	Computer Science & Engineering
	Chemical Engineering
	Nanoscience & Nanotechnology
	Environmental Science & Engineering
	Food Science & Technology
	Aerospace Engineering
	Transportation Science & Technology
	Mining & Mineral Engineering
Medical Sciences	
Clinical Medicine	Statistics
Public Health	Law
Dentistry & Oral Sciences	Economics
Nursing	Political Sciences
Medical Technology	Sociology
Pharmacy & Pharmaceutical Sciences	Communication
	Psychology
	Business Administration
	Finance
	Management
	Public Administration
	Hospitality & Tourism Management
	Library & Information Science
Social Sciences	

Candidate Universities

To be included in a subject ranking, the universities need to have a minimum number of research publications during the period of 2013-2017. The publication threshold is different for different subjects. Bibliometric data are collected from Web of Science and InCites. Web of Science categories are mapped to 54 academic subjects. Details can be found [here](#). [ver Anexo [4.1 Mapping between Web of Science categories and 54 academic subjects](#)]

Fields	Subjects	Publication Threshold	Listed Universities
Natural Sciences	Mathematics	100	500
	Physics	300	500
	Chemistry	200	500
	Earth Sciences	100	500
	Geography	100	300
	Ecology	100	500
	Oceanography	50	200
	Atmospheric Science	50	400
Engineering	Mechanical Engineering	100	400
	Electrical & Electronic Engineering	150	500
	Automation & Control	100	200
	Telecommunication Engineering	100	300
	Instruments Science & Technology	100	300
	Biomedical Engineering	100	300
	Computer Science & Engineering	150	500
	Civil Engineering	100	300
	Chemical Engineering	100	500
	Materials Science & Engineering	200	500
	Nanoscience & Nanotechnology	150	400
	Energy Science & Engineering	100	500
	Environmental Science & Engineering	200	500
	Water Resources	100	200
	Food Science & Technology	100	300
	Biotechnology	100	500
	Aerospace Engineering	50	50
	Marine/Ocean Engineering	50	50
	Transportation Science & Technology	50	200
	Remote Sensing	50	100
	Mining & Mineral Engineering	25	100
	Metallurgical Engineering	100	200



Indicators and Weights

Different weights are allocated to the indicators for different subjects, as listed below. For each indicator, institutions are calculated as a percentage of the top scored institution, then the square root of the percentage is multiplied by the allocated weight. A final score is arrived by adding scores for all indicators and the final score is ranked in descending order.

In calculating the score of CNCI, the maximum value of CNCI in a subject is set as the lower value of: (1) the twice of the average CNCI for all institutions in this subject; (2) the maximum of the CNCI for all institutions in this subject. Institutions' scores on CNCI are calculated as the proportion of their CNCI to the maximum value. If an institution's CNCI is higher than the maximum value, its score on CNCI will be assigned as 100.



2019 SHANGHAIRANKING'S GLOBAL RANKING OF ACADEMIC SUBJECTS

INDICATORS AND WEIGHTS

	PUB	CNCI	IC	TOP	AWARD
Natural Sciences	Mathematics	100	100	20	100
	Physics	100	100	20	100
	Chemistry	100	100	20	100
	Earth Sciences	100	100	20	100
	Geography	100	100	20	100
	Ecology	100	100	20	100
	Oceanography	100	100	20	100
Engineering	Atmospheric Science	100	100	20	100
	Mechanical Engineering	100	100	20	100
	Electrical & Electronic Engineering	100	100	20	100
	Automation & Control	100	100	20	100
	Telecommunication Engineering	100	100	20	100
	Instruments Science & Technology	100	100	20	100
	Biomedical Engineering	100	100	20	100
	Computer Science & Engineering	100	100	20	100
	Civil Engineering	100	100	20	100
	Chemical Engineering	100	100	20	100
	Materials Science & Engineering	100	100	20	100
	Nanoscience & Nanotechnology	100	100	20	100
	Energy Science & Engineering	100	100	20	100
	Environmental Science & Engineering	100	100	20	100
	Water Resources	100	100	20	100
	Food Science & Technology	100	100	20	100
	Biotechnology	100	100	20	100
	Aerospace Engineering	100	100	20	100
	Marine/Ocean Engineering	100	100	20	100
	Transportation Science & Technology	100	100	20	100
	Remote Sensing	100	100	20	100
	Mining & Mineral Engineering	100	100	20	100
	Metallurgical Engineering	100	100	20	100

	Biological Sciences	100	100	20	100	100
	Human Biological Sciences	100	100	20	100	100
	Agricultural Sciences	100	100	20	100	
	Veterinary Sciences	100	100	20	100	
	Clinical Medicine	100	100	20	100	100
	Public Health	100	100	20	100	
	Dentistry & Oral Sciences	100	100	20	100	100
	Nursing	100	100	20	100	20
	Medical Technology	100	100	20	100	
	Pharmacy & Pharmaceutical Sciences	100	100	20	100	20
	Economics	150	50	10	100	100
	Statistics	150	50	10	100	100
	Law	150	50	10	100	
	Political Sciences	150	50	10	100	20
	Sociology	150	50	10	100	
	Education	150	50	10	100	
	Communication	150	50	10	100	
	Psychology	150	50	10	100	
	Business Administration	150	50	10	100	
	Finance	150	50	10	100	
	Management	150	50	10	100	
	Public Administration	150	50	10	100	
	Hospitality & Tourism Management	150	50	10	100	20
	Library & Information Science	150	50	10	100	

Definition of Indicators

Indicators	Definition
PUB	PUB is the number of papers authored by an institution in an Academic Subject during the period of 2013-2017. Only papers of 'Article' type are considered. Data are collected from Web of Science and InCites. Papers in different Web of Science categories are grouped into relevant Academic Subjects (Classification of Web of Science Categories into Academic Subjects).
CNCI	Category Normalized Citation Impact (CNCI) is the ratio of citation of papers published by an institution in an Academic Subject during the period of 2013-2017 to the average citations of papers in the same category, of the same year and same type. A CNCI value of 1 represents world-average performance while a value above 1 represents performance above the world average. Only papers of 'Article' type are considered. Data are collected from InCites database.
IC	International collaboration (IC) is the number of publications that have been found with at least two different countries in addresses of the authors divided by the total number of publications in an Academic Subject for an institution during the period of 2013-2017. Only papers of 'Article' type are considered. Data are collected from InCites database.

Indicators	Definition
TOP	<p>TOP is the number of papers published in Top Journals in an Academic Subject for an institution during the period of 2013-2017. Top Journals are identified through ShanghaiRanking's Academic Excellence Survey or by Journal Impact Factor. In 2019, 134 top journals selected by the Survey are used in rankings of 45 Academic Subjects. In Computer Science & Engineering, 17 selected top conferences are also taken into account this year. The list of the top journals and conferences can be found here. [Ver Anexo 4.2 ShanghaiRanking Academic Excellence Survey 2019 Top Journals & Conferences]</p> <p>For Academic Subjects that do not have journals identified by the Survey, the JCR top 20% journals are used. Top 20% journals are defined as their Journal Impact Factors in the top 20% of each Web of Science category according to Journal Citation Report (JCR) 2017, and then aggregated into different Academic Subjects. Only papers of 'Article' type are considered.</p>
AWARD	<p>AWARD refers to the total number of the staff of an institution wining a significant award in an Academic Subject since 1981. Staff is defined as those who work full-time at an institution at the time of winning the prize. If a researcher retired at the time of winning the award, we count the institution where the researcher's last full-time academic position was at. The significant awards in each subject are identified through ShanghaiRanking's Academic Excellence Survey. The list of the significant awards in each subject can be viewed here. [Ver Anexo 4.3 ShanghaiRanking Academic Excellence Survey 2019 Top Award]</p> <p>If a winner is affiliated with more than one institution at the time of winning the award, each institution is assigned the reciprocal of the number of institutions. If the award is awarded to more than one winner in one year, weights are set for winners according to their proportion of the prize. Different weights are set according to the periods of winning the prizes. The weight is 100% for winners in 2011-2017, 75% for winners in 2001-2010, 50% for winners in 1991-2000, and 25% for winners in 1981-1990</p> <p>Nobel Prize in Physiology or Medicine is selected for Biological Sciences, Human Biological Sciences, Clinical Medicine and Pharmacy & Pharmaceutical Sciences.</p> <p>Winners of this award are assigned to one or more subjects according to the topics of their recognized contributions. If a contribution belongs to more than one subject, the winner will be counted once for each relevant subject. .</p>

Data Sources

Indicators	Sources
PUB	InCites database https://incites.clarivate.com/#/analytics
CNCI	InCites database https://incites.clarivate.com/#/analytics
IC	InCites database https://incites.clarivate.com/#/analytics
TOP	InCites database https://incites.clarivate.com/#/analytics
AWARD	Fields Medal http://www.mathunion.org/general/prizes/fields/details/
	The Abel Prize http://www.abelprize.no/
	Nobel Prize in Physics http://www.nobelprize.org/nobel_prizes/
	Nobel Prize in Chemistry http://www.nobelprize.org/nobel_prizes/
	Wolf Prize in Chemistry http://www.wolffund.org.il/index.php?dir=site&page=content&sub=p&cs=3052
	Priestley Medal http://www.acs.org/content/acs/en/funding-and-awards/awards/national/bytopic/priestley-medal.html
	Crafoord Prize in Geosciences http://www.crafoordprize.se/
	ASME Medal https://www.asme.org/about-asme/get-involved/honors-awards/achievement-awards/as-me-medal
	Timoshenko Medal https://www.asme.org/about-asme/get-involved/honors-awards/achievement-awards/timoshenko-medal
	IEEE Medal of Honor http://www.ieee.org/about/awards/medals/medalofhonor.html
	IEEE Control Systems Award https://www.ieee.org/about/awards/tfas/controlsyst.html

Indicators	Sources
A.M. Turing Award http://amturing.acm.org/	
International Award of Merit in Structural Engineering http://www.iabse.org/IABSE/IABSE_Association/Awards/Award_of_Merit/IABSE_association/Award_files/International_Award_of_Merit_in_Structural_Engineering/Merit.aspx?hkey=4e67443b-411c-4a37-9e42-0c99b434d5f1	
Andreas Acrivos Award for Professional Progress in Chemical Engineering https://www.aiche.org/community/awards/andreas-acrivos-award-professional-progress-chemical-engineering	
MRS Medal Award http://www.mrs.org/medal/	
Von Hippel Award http://www.mrs.org/vonhippel/	
Stockholm Water Prize http://www.siwi.org/prizes/stockholmwaterprize/	
Robert E. Horton Medal https://honors.agu.org/medals-awards/robert-e-horton-award/	
Nobel Prize in Physiology or Medicine http://www.nobelprize.org/nobel_prizes/	
Lasker-DeBakey Clinical Medical Research Award http://www.laskerfoundation.org/awards/#name=&award=Clinical&year=	
IADR Distinguished Scientist Award http://www.iadr.org/IADR/Awards/Grants-Awards/Distinguished-Scientist	
Nurse Researcher Hall of Fame https://www.sigmanursing.org/advance-elevate/awards/nurse-researcher-awards	
The Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel http://www.nobelprize.org/nobel_prizes/	
COPSS Presidents' Award http://community.amstat.org/copss/home	
The Johan Skytte Prize in Political Science http://www.skytteprize.com/	
Ulysses Prize http://know.unwto.org/content/unwto-ulisses-prize-excellence-creation-and-dissemination-knowledge	

" 1

¹ In <http://www.shanghairanking.com/Shanghairanking-Subject-Rankings/Methodology-for-ShanghaiRanking-Global-Ranking-of-Academic-Subjects-2019.html>, acedido 26 de junho de 2019.

2. Evolução² da Universidade do Porto no ShanghaiRanking's Global Ranking of Academic Subjects

Evolução das posições

	2017				2018				2019			
	World rank	Euro rank	IbAm rank	PT rank	World rank	Euro rank	IbAm rank	PT rank	World rank	Euro rank	IbAm rank	PT rank
NATURAL SCIENCES												
Mathematics	401-500	188-231	29-35	4	n/c				n/c			
Physics	401-500	187-224	31-39	4-5	401-500	187-223	31-38	4-5	401-500	184-224	29-38	3-5
Chemistry	201-300	72-122	7-17	1-3	301-400	118-167	16-21	3-4	301-400	115-160	14-20	2-4
Earth Sciences	n/c				n/c				401-500	174-221	20-32	3-5
Geography	n/c				n/c				201-300	89-147	8-20	2-3
Ecology	101-150	42-70	3-6	1-2	101-150	49-72	3-6	1-2	101-150	48-74	3-7	1-2
Oceanography (novo 2018)					151-200	66-82	11-20	4-5	151-200	69-81	14-23	5
Atmospheric Science (novo 2018)					301-400	138-164	17-23	3-4	301-400	133-167	15-23	3-4
ENGINEERING												
Mechanical Engineering	151-200	51-67	3-6	2	151-200	46-59	4-7	2	201-300	70-97	5-11	2
Electrical & Electronic Engineering	201-300	67-104	10-18	3	301-400	94-129	15-27	3-4	301-400	94-128	15-22	4-5
Automation & Control	n/c				101-150	34-45	6-9	2-3	151-200	48-56	7-13	3
Telecommunication Engineering	n/c				n/c				n/c			
Instruments Science & Technology	151-200	61-81	13-18	3	151-200	53-74	11-17	3	201-300	75-123	13-21	3-4
Biomedical Engineering	151-200	51-70	4-6	2	101-150	27-47	1-3	1-2	76-100	19-26	1	1
Computer Science & Engineering	101-150	33-50	6-9	2	401-500	151-198	23-32	4-6	301-400	100-144	12-19	3
Civil Engineering	201-300	56-93	11-17	5-6	101-150	22-38	6-8	4	101-150	24-39	6	4
Chemical Engineering	29	7	1	1	41	7	1	1	51-75	7-13	1	1
Materials Science & Engineering	201-300	69-120	5-10	1-3	201-300	67-112	4-9	1-2	301-400	95-137	11-16	3-4

² Retirado de <http://www.shanghairanking.com/Shanghairanking-Subject-Rankings/index.html> em 3 e 4 de julho de 2017, GRAS 2017; de 17 a 19 de julho de 2018, GRAS 2018; 26 de junho a 4 de julho de 2019, GRAS 2019.

	2017				2018				2019			
	World rank	Euro rank	IbAm rank	PT rank	World rank	Euro rank	IbAm rank	PT rank	World rank	Euro rank	IbAm rank	PT rank
Nanoscience & Nanotechnology	n/c				301-400	96-119	9-18	2-4	301-400	93-126	7-16	1-4
Energy Science & Engineering	201-300	64-108	8-16	2-3	201-300	61-99	6-14	2-3	201-300	54-91	5-13	2
Environmental Science & Engineering	151-200	50-68	6-8	2-3	151-200	49-70	7-8	2-3	151-200	44-67	5-8	1-3
Water Resources	151-200	61-77	8-10	2	n/c				n/c			
Food Science & Technology	11	4	3	1	12	3	3	1	11	3	3	1
Biotechnology	201-300	74-115	8-14	3-4	151-200	48-69	5-8	1-3	201-300	70-116	7-12	2-4
Aerospace Engineering	n/c				n/c				n/c			
Marine/Ocean Engineering	n/c				n/c				n/c			
Transportation Science & Technology	n/c				151-200	44-59	9-11	3	151-200	44-60	7-12	3
Remote Sensing	n/c				n/c				n/c			
Mining & Mineral Engineering	n/c				n/c				n/c			
Metallurgical Engineering	n/c				n/c				n/c			
LIFE SCIENCES												
Biological Sciences	201-300	103-143	5-8	1-2	151-200	70-95	4-5	1-2	201-300	99-143	5-8	2
Human Biological Sciences	201-300	98-142	4-11	1-3	201-300	96-138	4-11	1-3	201-300	96-141	4-9	1-3
Agricultural Sciences	151-200	67-93	13-16	2	151-200	68-94	15-17	2	101-150	43-69	11-14	2
Veterinary Sciences	51-75	30-40	6-10	1	51-75	27-37	6-9	1-2	51-75	25-39	6-9	1-2
MEDICAL SCIENCES												
Clinical Medicine	301-400	154-197	8-16	1-2	301-400	149-189	11-21	1-2	201-300	87-128	6-14	1
Public Health	151-200	55-71	5-8	1	151-200	61-74	5-7	1	101-150	38-62	5	1
Dentistry & Oral Sciences	n/c				201-300	82-118	19-37	1	201-300	79-119	20-38	1
Nursing	n/c				n/c				n/c			
Medical Technology	n/c				n/c				n/c			
Pharmacy & Pharmaceutical Sciences	76-100	37-46	3	1	51-75	36-43	2-3	1	101-150	46-67	4-5	2

	2017				2018				2019			
	World rank	Euro rank	IbAm rank	PT rank	World rank	Euro rank	IbAm rank	PT rank	World rank	Euro rank	IbAm rank	PT rank
SOCIAL SCIENCES												
Economics	n/c				201-300	92-142	6-15	1-4	301-400	140-196	12-24	3-4
Statistics	n/c				n/c				n/c			
Law	n/c				n/c				n/c			
Political Sciences	n/c				n/c				n/c			
Sociology	n/c				n/c				n/c			
Education	n/c				301-400	80-120	7-16	2-3	301-400	91-125	6-14	1-3
Communication	n/c				n/c				n/c			
Psychology	n/c				401-500	164-211	15-20	5-6	401-500	168-214	14-19	4-6
Business Administration	n/c				n/c				n/c			
Finance	n/c				n/c				n/c			
Management	301-400	96-135	14-23	3-4	301-400	105-148	18-24	3-4	301-400	107-146	14-21	3
Public Administration	n/c				n/c				n/c			
Hospitality & Tourism Management	n/c				n/c				n/c			
Library & Information Science	n/c				n/c				n/c			

n/c - não consta

Evolução dos scores

	2017						2018						2019					
	Total Sc	PUB	CNCI	IC	TOP	AWA RD	Total Sc	PUB	CNCI	IC	TOP	AWA RD	Total Sc	PUB	CNCI	IC	TOP	AWA RD
NATURAL SCIENCES																		
Mathematics	39,4	51,9	72,2	0	0													
Physics	35,7	45	86,3	12,7	0		36,5	57,7	86,9	16	0		37,2	71,3	87	17,1	0	
Chemistry	52	60,2	72,4	11	0		50,9	61,5	73,3	11,1	0		49,3	69,9	71,6	11,2	0	
Earth Sciences														28,9	65,1	81,1	5,8	0
Geography														35	64,9	77,6	21,3	n/a
Ecology	57,3	60,2	89,4	49,1	n/a		60,1	62,7	60,1	30,9	n/a		61,5	66,5	91,7	31,6	n/a	
Oceanography (novo 2018)							35,6	62	82,4	19,4	n/a		33,3	64,3	82,7	20,1	n/a	
Atmospheric Science(novo 2018)							19	53,9	19	14,7	n/a		17,8	63,9	72,1	7,5	n/a	
ENGINEERING																		
Mechanical Engineering	36,9	67	63,4	15,9	0		36,4	56,5	64,5	19,6	0		34,9	78,7	66,6	10,1	0	
Electrical & Electronic Engineering	31,5	51,6	76,3	21,6	0		30	62,5	76,2	0	0		28,2	70,8	76,6	0	0	
Automation & Control							32	41,5	72	31,8	0		28,9	55,1	73,5	30,8	0	
Telecommunication Engineering																		
Instruments Science & Technology	39,9	51,1	72,1	42,2	n/a		38,7	53,1	73,2	39,2	n/a		36,4	64,7	78,1	31,5	n/a	
Biomedical Engineering	36,8	61,6	66,3	26,3	0		39,1	63,2	67,2	31,8	0		40,7	72,7	72,1	37,4	n/a	
Computer Science & Engineering	41,3	53,4	68,6	89,4	0		41,2	47,9	69,1	0	0		41,1	64	69,9	6,8	0	
Civil Engineering	46,8	42,4	64,8	0	0		44,6	39,9	57,6	21,8	0		41,8	72,4	57,7	19,8	0	
Chemical Engineering	196,2	63,9	61,5	73,1	56,2	0	174,6	59,1	56,1	73,3	44,6	0		53,3	73,1	72,3	43,9	0
Materials Science & Engineering	38,9	65	72	14	0		38,5	65,4	72,3	13,5	0		37,1	74,1	73,8	7,4	0	
Nanoscience & Nanotechnology							29,5	62,3	82,1	10,8	n/a		28,6	63,9	80,6	11,3	n/a	
Energy Science & Engineering	34,7	65,5	79,5	16,9	n/a		34,1	63,1	80,3	16,3	n/a		33,1	69	76,9	18,8	n/a	
Environmental Science & Engineering							66	64,6	67,8	15,7	0		62,2	66,4	68	15	0	
Water Resources	39,7	62,8	65,6	36,3	n/a													
Food Science & Technology	239	69,2	77	60,1	80,8	n/a	231,3	67,7	74,3	63,7	76,5	n/a	226,1	64,6	74,7	67	73,4	n/a
Biotechnology		46	42,2	70,8	30,9	n/a		48	44	70,8	31,1	n/a	48,8	63,8	72,7	29,8	n/a	48,8
Aerospace Engineering																		
Marine/Ocean Engineering																		
Transportation Science & Technology							33,2	62,8	61,6	33,8	n/a	31,9	64,9	66,8	27,9	n/a	31,9	
Remote Sensing																		

	2017						2018						2019					
	Total Sc	PUB	CNCI	IC	TOP	AWA RD	Total Sc	PUB	CNCI	IC	TOP	AWA RD	Total Sc	PUB	CNCI	IC	TOP	AWA RD
Mining & Mineral Engineering																		
Metallurgical Engineering																		
LIFE SCIENCES																		
Biological Sciences	40,7	40,5	79,9	11,1	0		41,5	44,6	80,3	6,9	0		41,7	70,2	81,8	4,9	0	
Human Biological Sciences	27,1	60,8	72,9	19,3	n/a		27,6	60,8	74,2	20	n/a		27,9	70,2	75,3	20	0	
Agricultural Sciences	39,7	62,2	77,2	36,1	n/a		39,5	62,7	79,6	35,6	n/a		39,6	71,5	79,8	36,8	n/a	
Veterinary Sciences	31,2	85,3	76,1	29,9	n/a		31,2	83,6	76,8	34,3	n/a		32,1	87,9	80,8	35	n/a	
MEDICAL SCIENCES																		
Clinical Medicine	22,2	60,7	66,4	9,1	0		22,7	64,2	67,3	14	0		23,4	82	68,1	19,6	0	
Public Health	27,8	39,4	69	23,5	n/a		28	53,3	70,3	9,6	n/a		29,4	81,3	72,5	15,6	n/a	
Dentistry & Oral Sciences							22,2	56,1	64,4	14,4	0		22,2	58,9	58,4	15,4	0	
Nursing																		
Medical Technology																		
Pharmacy & Pharmaceutical Sciences	63,5	59,6	71,6	0	0		65,5	61,3	70,9	0	n/a		66,1	76	70,6	0	0	
SOCIAL SCIENCES																		
Economics							37,4	41,6	60,3	6,7	0		37,1	50,7	61,1	6,6	0	
Statistics																		
Law																		
Political Sciences																		
Sociology																		
Education							38,4	50,9	57,8	0	n/a		40,8	58,2	59,3	0	n/a	
Communication																		
Psychology							29,7	59	75,6	0	n/a		31,3	63,4	76,1	0	n/a	
Business Administration																		
Finance																		
Management	40,9	53,3	78,2	0	n/a		44	57,9	78	0	n/a		44,9	67,6	75,5	0	n/a	
Public Administration																		
Hospitality & Tourism Management																		
Library & Information Science																		

n/a – não aplicável

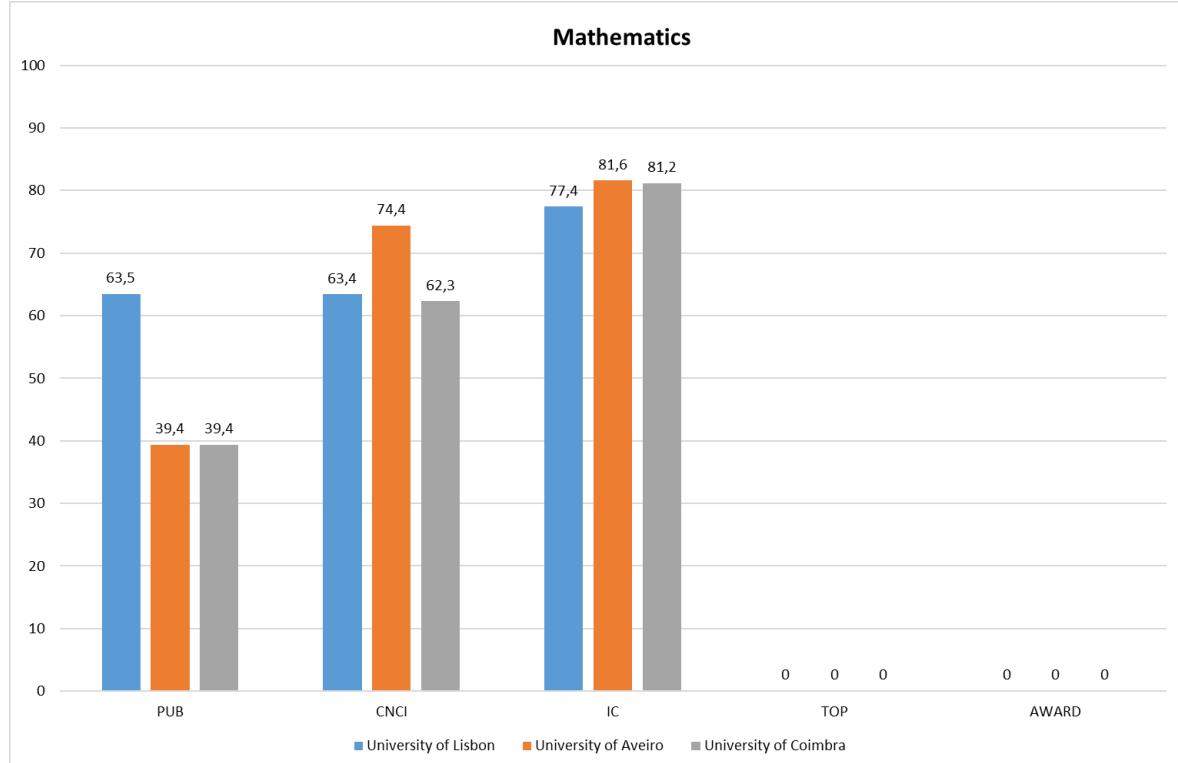
3. As Universidades portuguesas no ShanghaiRanking's Global Ranking of Academic Subjects 2019

3.1 NATURAL SCIENCES

3.1.1 Mathematics

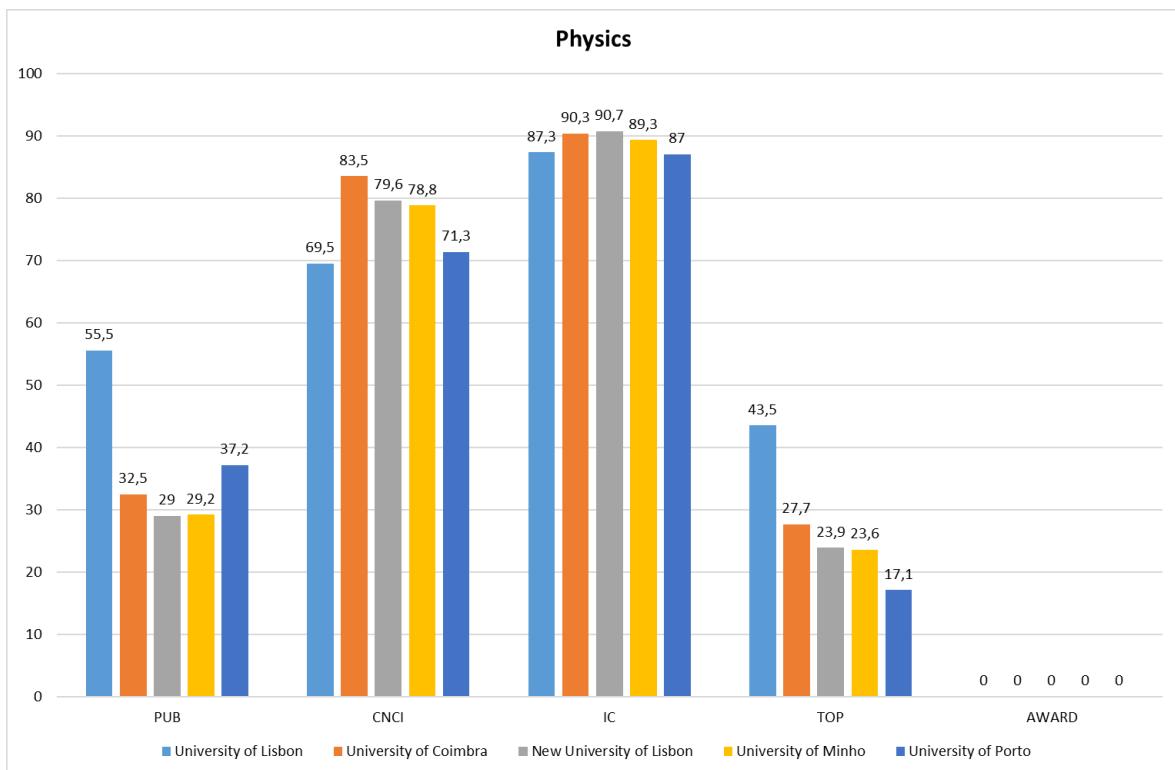
World Rank 2019	World Rank 2018	World Rank 2017	Euro Rank	IbAm Rank	PT Rank	Institution	Total Score	PUB	CNCI	IC	TOP	AWARD
201-300	151-200	76-100	99-142	10-19	1	University of Lisbon		63,5	63,4	77,4	0	0
301-400	301-400	201-300	143-188	20-28	2	University of Aveiro		39,4	74,4	81,6	0	0
401-500	301-400	301-400	189-227	29-34	3	University of Coimbra		39,4	62,3	81,2	0	0
n/c	n/c	401-500				University of Porto						
500	500	500	227	34	3	Nº IES						

n/c - não consta



3.1.2 Physics

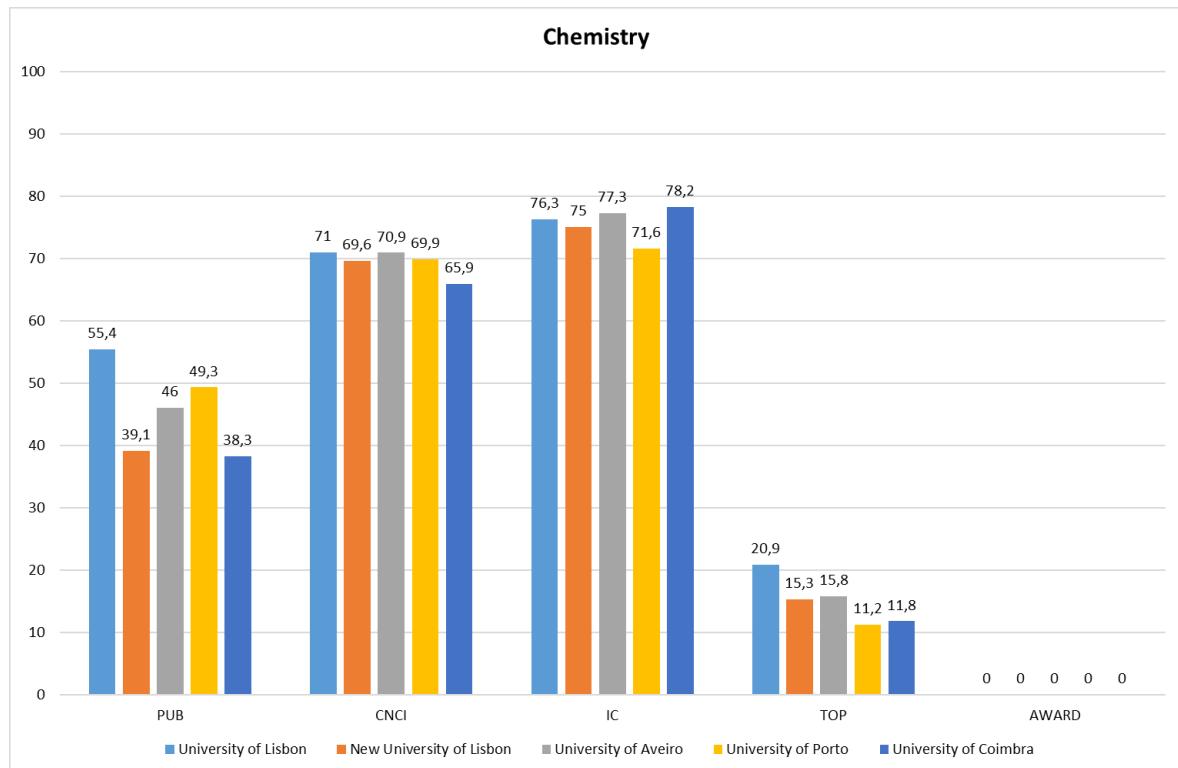
World Rank 2019	World Rank 2018	World Rank 2017	Euro Rank	IbAm Rank	PT Rank	Institution	Total Score	PUB	CNCI	IC	TOP	AWARD
151-200	101-150	101-150	81-105	5-8	1	University of Lisbon		55,5	69,5	87,3	43,5	0
301-400	301-400	301-400	152-183	19-28	2	University of Coimbra		32,5	83,5	90,3	27,7	0
401-500	401-500	401-500	184-224	29-38	3-5	New University of Lisbon		29	79,6	90,7	23,9	0
401-500	301-400	301-400	184-224	29-38	3-5	University of Minho		29,2	78,8	89,3	23,6	0
401-500	401-500	401-500	184-224	29-38	3-5	University of Porto		37,2	71,3	87	17,1	0
500	500	500	224	38	5	Nº IES						



3.1.3 Chemistry

World Rank 2019	World Rank 2018	World Rank 17	Euro Rank	IbAm Rank	PT Rank	Institution	Total Score	PUB	CNCI	IC	TOP	AWARD
201-300	201-300	201-300	63-114	6-13	1	University of Lisbon		55,4	71	76,3	20,9	0
301-400	301-400	301-400	115-160	14-20	2-4	New University of Lisbon		39,1	69,6	75	15,3	0
301-400	201-300	201-300	115-160	14-20	2-4	University of Aveiro		46	70,9	77,3	15,8	0
301-400	301-400	201-300	115-160	14-20	2-4	University of Porto		49,3	69,9	71,6	11,2	0
401-500	401-500	401-500	161-200	21-26	5	University of Coimbra		38,3	65,9	78,2	11,8	0
n/c	401-500	401-500				University of Minho						
500	500	500	200	26	5	Nº IES						

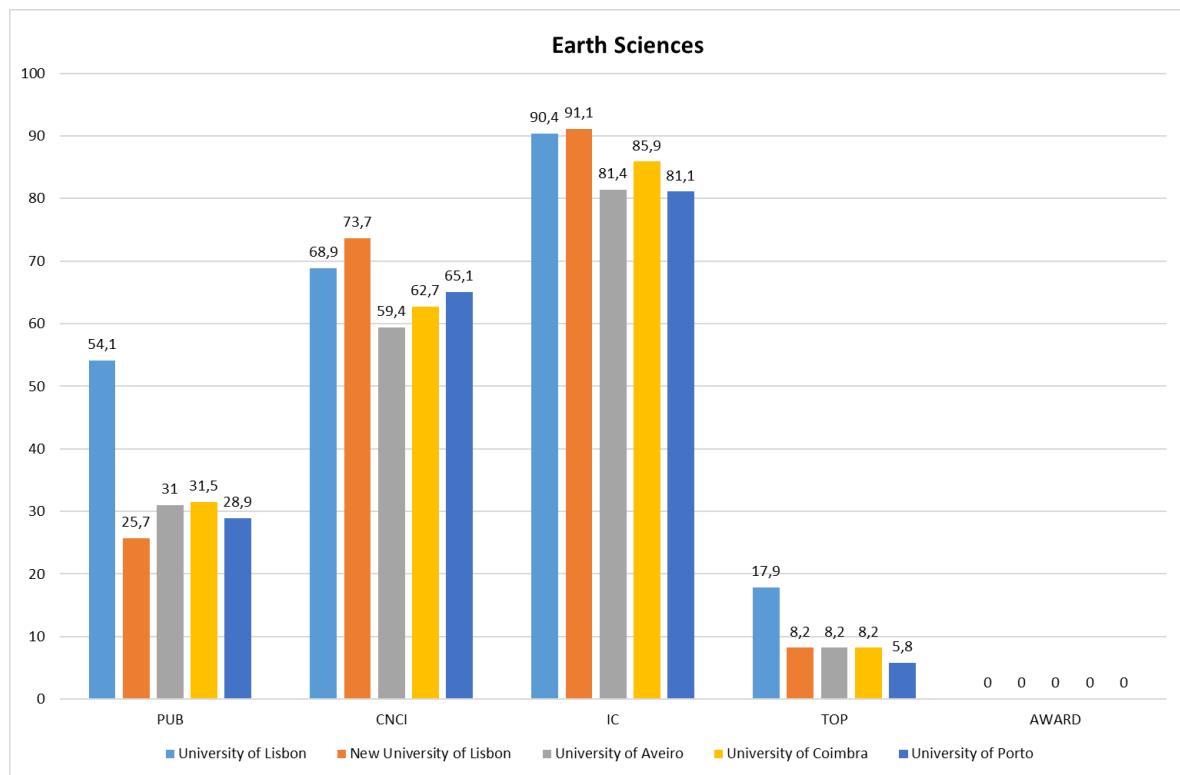
n/c - não consta



3.1.4 Earth Sciences

World Rank 2019	World Rank 2018	World Rank 2017	Euro Rank	IbAm Rank	PT Rank	Institution	Total Score	PUB	CNCI	IC	TOP	AWARD
151-200	151-200	151-200	69-93	2-7	1	University of Lisbon		54,1	68,9	90,4	17,9	0
301-400	301-400	n/c	135-173	9-19	2	New University of Lisbon		25,7	73,7	91,1	8,2	0
401-500	401-500	n/c	174-221	20-32	3-5	University of Aveiro		31	59,4	81,4	8,2	0
401-500	301-400	n/c	174-221	20-32	3-5	University of Coimbra		31,5	62,7	85,9	8,2	0
401-500	n/c	n/c	174-221	20-32	3-5	University of Porto		28,9	65,1	81,1	5,8	0
500	500	300	221	32	5	Nº IES						

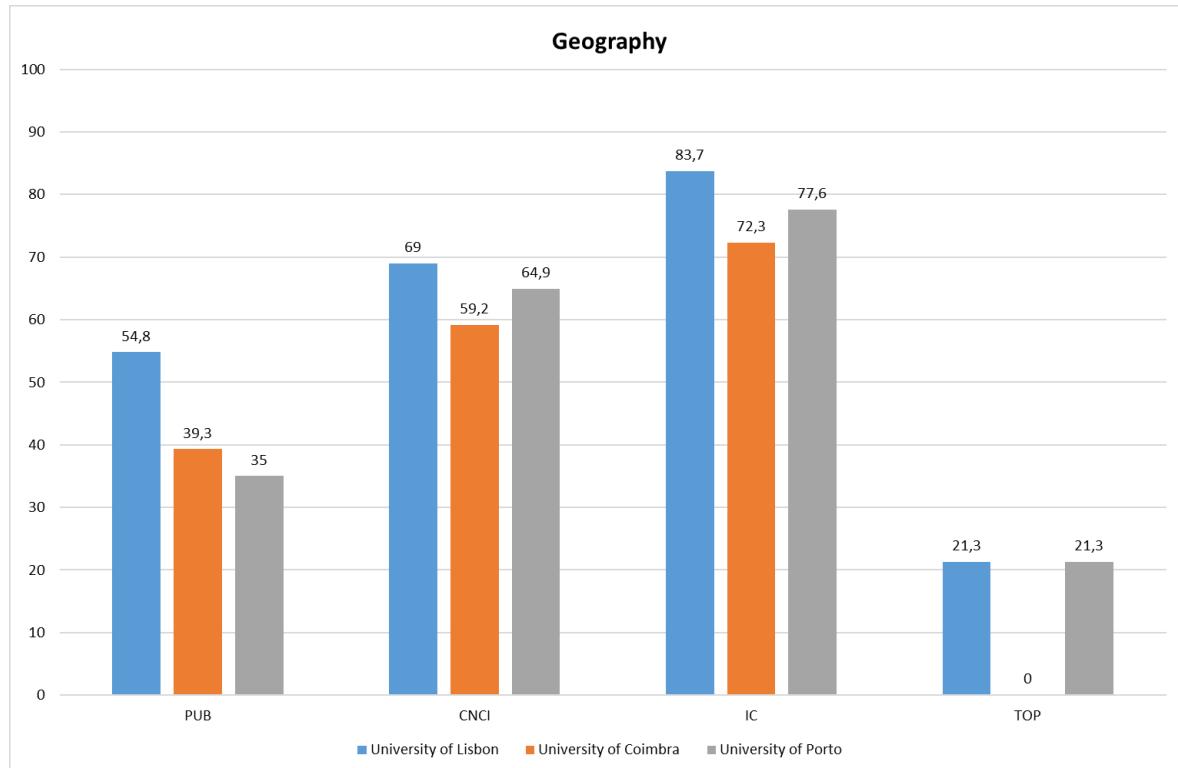
n/c - não consta



3.1.5 Geography

World Rank 19	World Rank 18	World Rank 17	Euro Rank	IbAm Rank	PT Rank	Institution	Total Score	PUB	CNCI	IC	TOP
101-150	76-100	101-150	43-65	2-3	1	University of Lisbon		54,8	69	83,7	21,3
201-300	n/c	n/c	89-147	8-20	2-3	University of Coimbra		39,3	59,2	72,3	0
201-300	n/c	n/c	89-147	8-20	2-3	University of Porto		35	64,9	77,6	21,3
300	200	200	147	20	3	Nº IES					

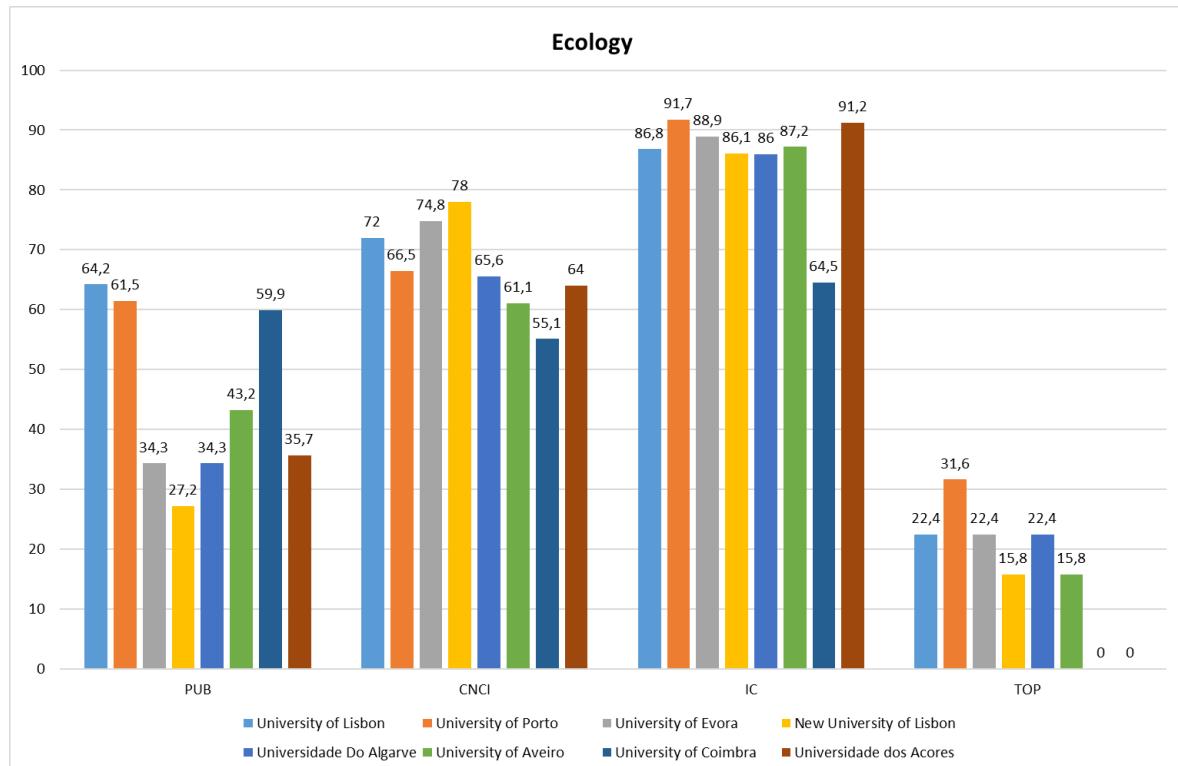
n/c - não consta



3.1.6 Ecology

World Rank 19	World Rank 18	World Rank 17	Euro Rank	IbAm Rank	PT Rank	Institution	Total Score	PUB	CNCI	IC	TOP
101-150	101-150	101-150	48-74	3-7	1-2	University of Lisbon		64,2	72	86,8	22,4
101-150	101-150	101-150	48-74	3-7	1-2	University of Porto		61,5	66,5	91,7	31,6
201-300	201-300	151-200	95-144	11-22	3	University of Evora		34,3	74,8	88,9	22,4
301-400	301-400	n/c	145-189	23-44	4-7	New University of Lisbon		27,2	78	86,1	15,8
301-400	201-300	n/c	145-189	23-45	4-7	Universidade do Algarve		34,3	65,6	86	22,4
301-400	301-400	n/c	145-189	23-46	4-7	University of Aveiro		43,2	61,1	87,2	15,8
301-400	301-400	201-300	145-189	23-47	4-7	University of Coimbra		59,9	55,1	64,5	0
401-500	301-400	201-300	190-220	45-75	8	Universidade dos Acores		35,7	64	91,2	0
500	400	300	220	75	8	Nº IES					

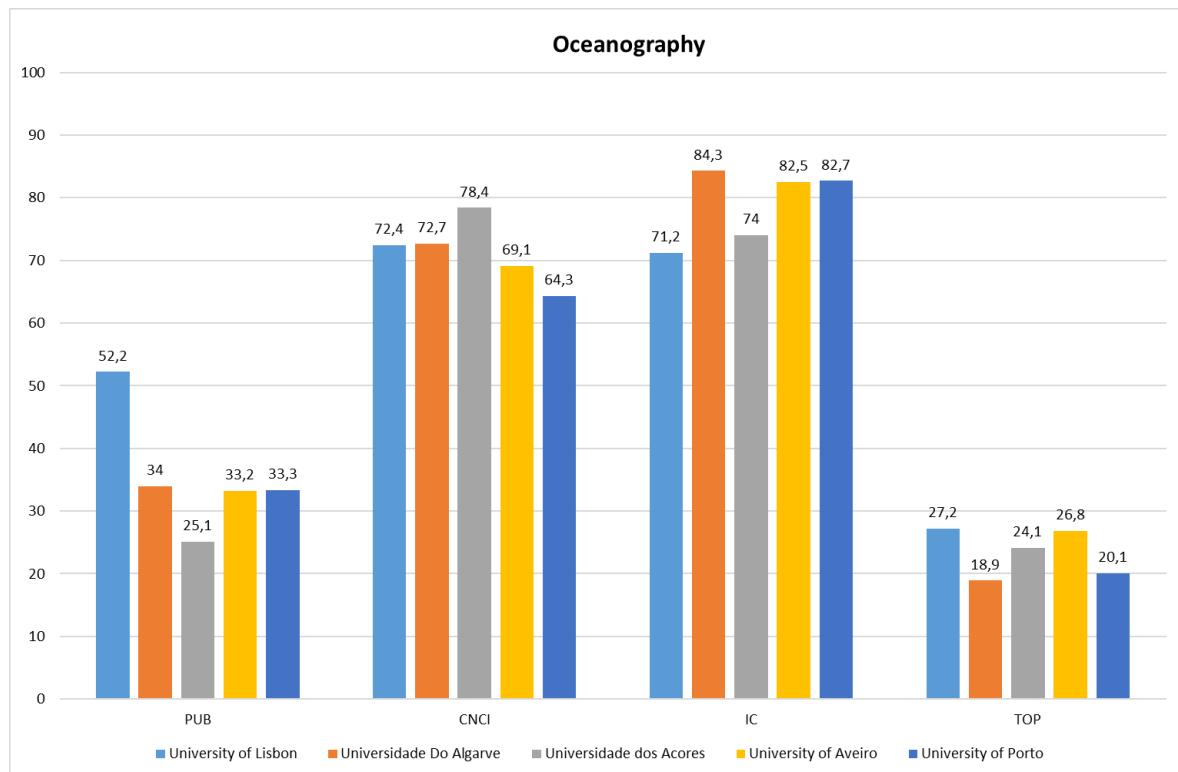
n/c - não consta



3.1.7 Oceanography

Área nova 2018

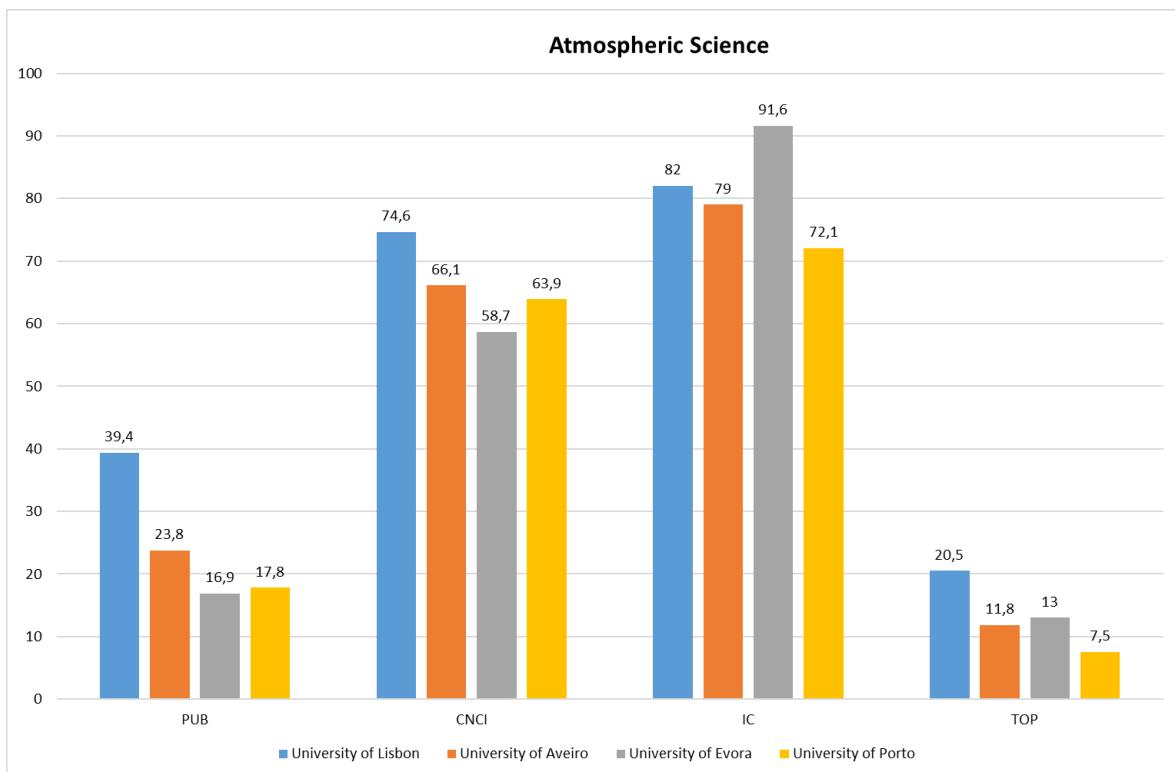
World Rank 19	World Rank 18	Euro Rank	IbAm Rank	PT Rank	Institution	Total Score	PUB	CNCI	IC	TOP
51-75	51-75	15-28	1-2	1	University of Lisbon		52,2	72,4	71,2	27,2
101-150	101-150	39-68	3-13	2-4	Universidade do Algarve		34	72,7	84,3	18,9
101-150	151-200	39-68	3-13	2-4	Universidade dos Acores		25,1	78,4	74	24,1
101-150	101-150	39-68	3-13	2-4	University of Aveiro		33,2	69,1	82,5	26,8
151-200	151-200	69-81	14-23	5	University of Porto		33,3	64,3	82,7	20,1
200	200	81	23	5	Nº IES					



3.1.8 Atmospheric Science

Área nova 2018

World Rank19	World Rank18	Euro Rank	IbAm Rank	PT Rank	Institution	Total Score	PUB	CNCI	IC	TOP
101-150	76-100	46-67	2	1	University of Lisbon		39,4	74,6	82	20,5
201-300	201-300	99-132	9-14	2	University of Aveiro		23,8	66,1	79	11,8
301-400	301-400	133-167	15-23	3-4	University of Evora		16,9	58,7	91,6	13
301-400	301-400	133-167	15-23	3-4	University of Porto		17,8	63,9	72,1	7,5
400	400	167	23	4	Nº IES					

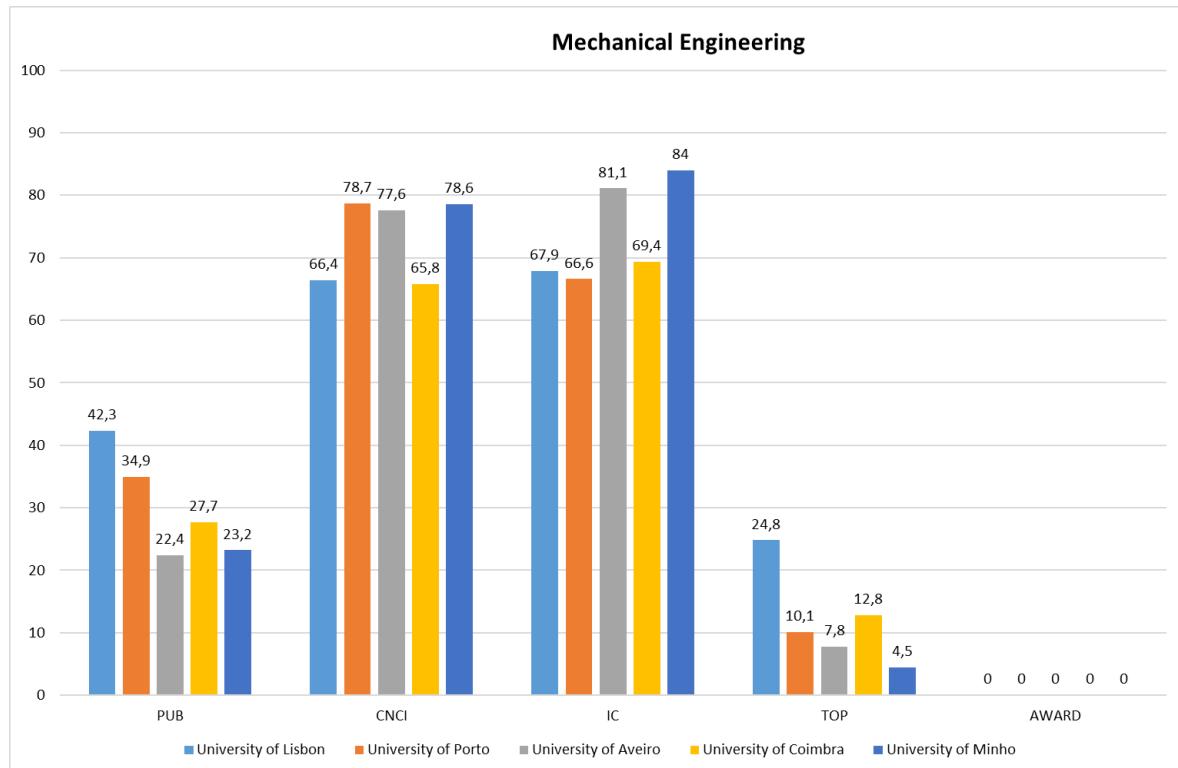


3.2 ENGINEERING

3.2.1 Mechanical Engineering

World Rank19	World Rank18	World Rank17	Euro Rank	IbAm Rank	PT Rank	Institution	Total Score	PUB	CNCI	IC	TOP	AWARD
151-200	101-150	101-150	49-69	1-4	1	University of Lisbon		42,3	66,4	67,9	24,8	0
201-300	151-200	151-200	70-97	5-11	2	University of Porto		34,9	78,7	66,6	10,1	0
301-400	n/c	201-300	98-124	12-24	3-5	University of Aveiro		22,4	77,6	81,1	7,8	0
301-400	n/c	n/c	98-124	12-24	3-5	University of Coimbra		27,7	65,8	69,4	12,8	0
301-400	201-300	201-300	98-124	12-24	3-5	University of Minho		23,2	78,6	84	4,5	0
400	300	300	124	24	5	Nº IES						

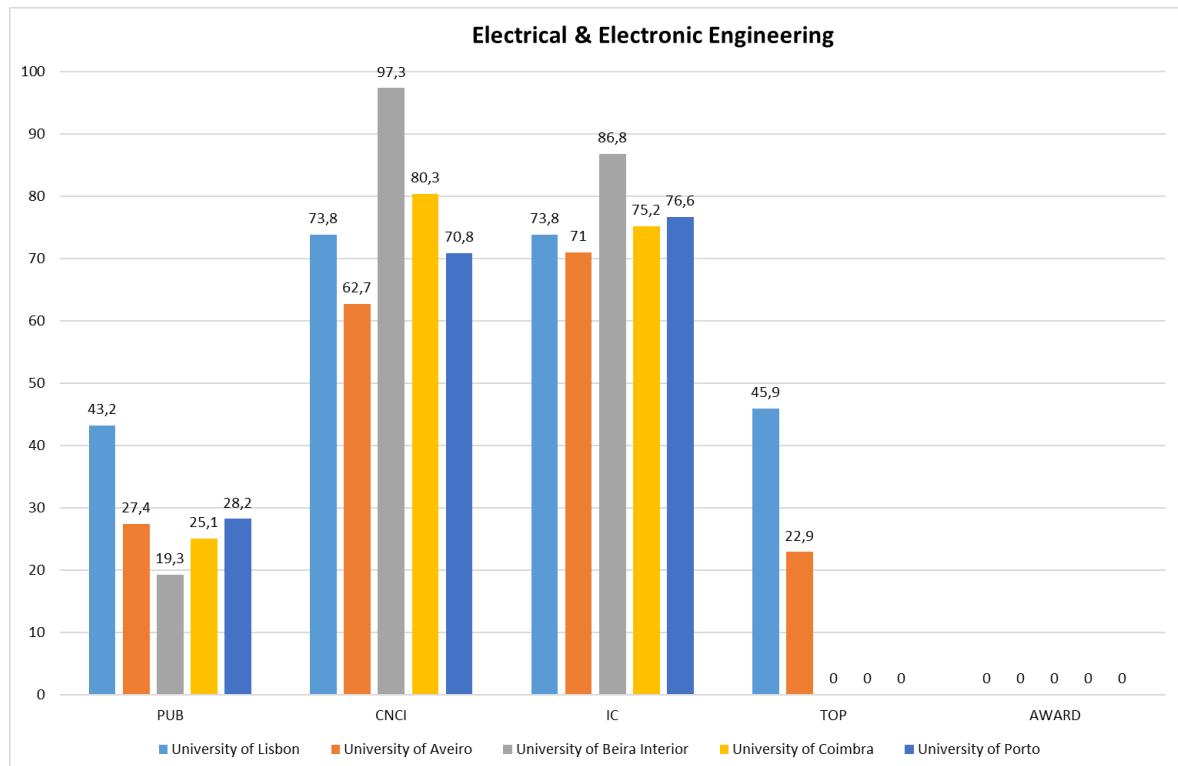
n/c - não consta



3.2.2 Electrical & Electronic Engineering

World Rank 19	World Rank 18	World Rank 17	Euro Rank	IbAm Rank	PT Rank	Institution	Total Score	PUB	CNCI	IC	TOP	AWARD
51-75	51-75	76-100	10-22	2	1	University of Lisbon		43,2	73,8	73,8	45,9	0
201-300	301-400	301-400	62-93	9-14	2-3	University of Aveiro		27,4	62,7	71	22,9	0
201-300	n/c	301-400	62-93	9-14	2-3	University of Beira Interior		19,3	97,3	86,8	0	0
301-400	101-150	151-200	94-128	15-22	4-5	University of Coimbra		25,1	80,3	75,2	0	0
301-400	301-400	201-300	94-128	15-22	4-5	University of Porto		28,2	70,8	76,6	0	0
500	500	500	159	32	5	Nº IES						

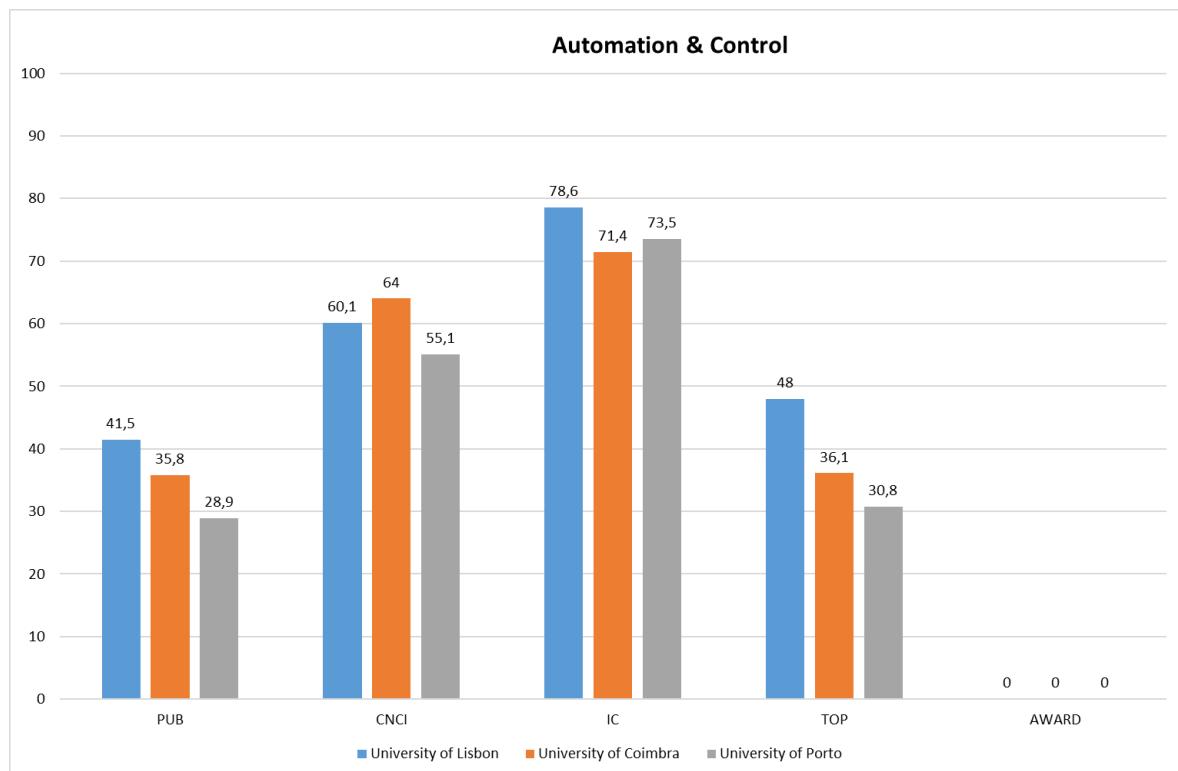
n/c - não consta



3.2.3 Automation & Control

World Rank 19	World Rank 18	World Rank 17	Euro Rank	IbAm Rank	PT Rank	Institution	Total Score	PUB	CNCI	IC	TOP	AWARD
76-100	76-100	76-100	24-32	3-4	1	University of Lisbon		41,5	60,1	78,6	48	0
101-150	101-150	76-100	33-47	5-6	2	University of Coimbra		35,8	64	71,4	36,1	0
151-200	101-150	n/c	48-56	7-13	3	University of Porto		28,9	55,1	73,5	30,8	0
200	200	100	56	13	3	Nº IES						

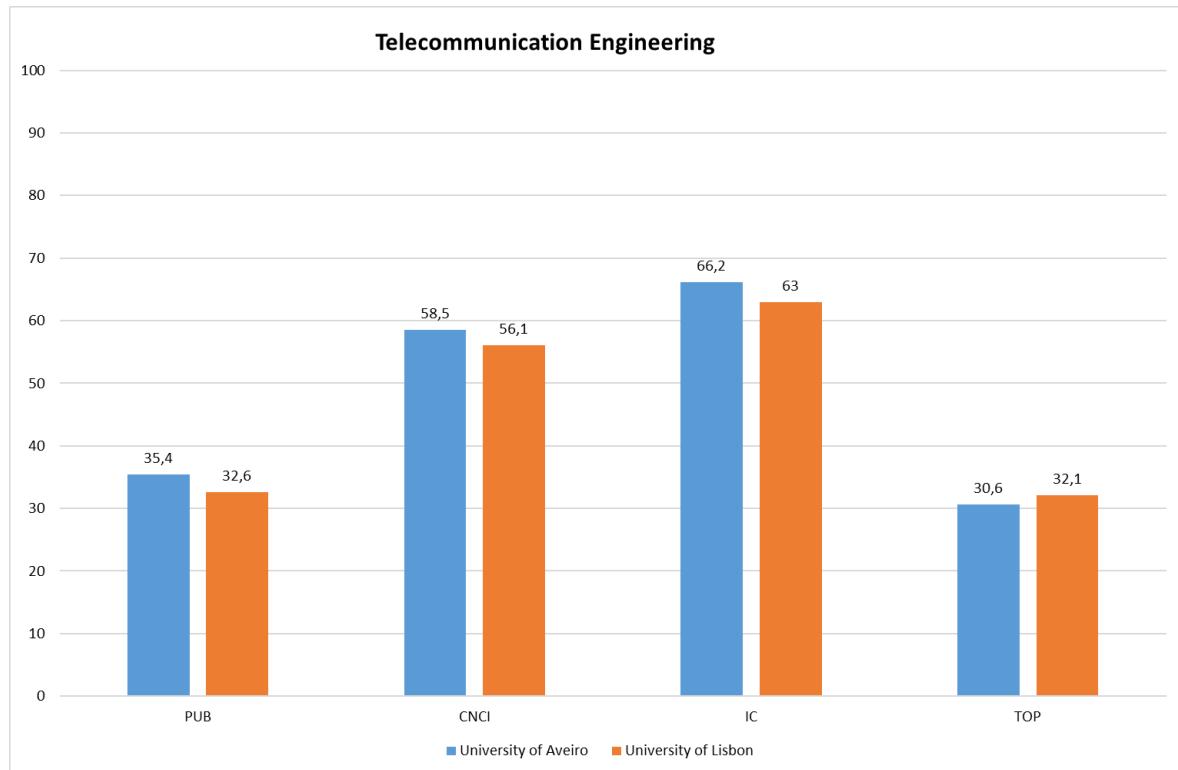
n/c - não consta



3.2.4 Telecommunication Engineering

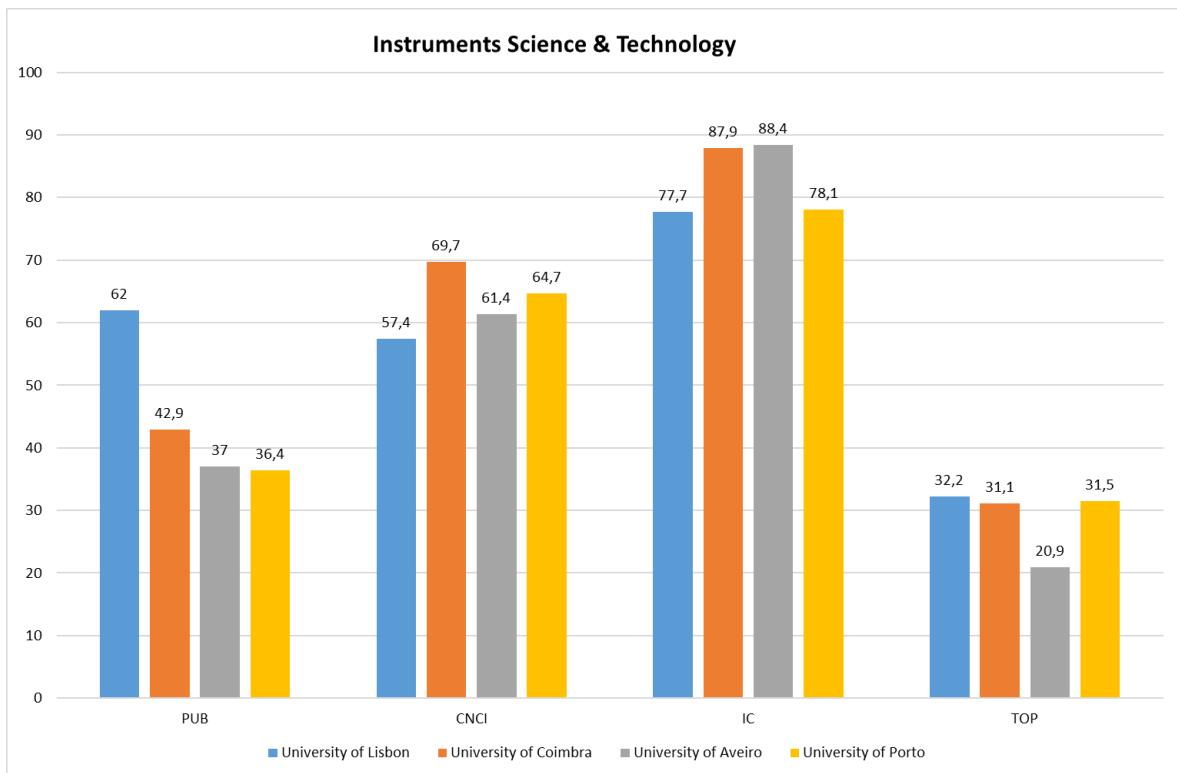
World Rank 19	World Rank 18	World Rank 17	Euro Rank	IbAm Rank	PT Rank	Institution	Total Score	PUB	CNCI	IC	TOP
151-200	151-200	151-200	43-58	4-5	1	University of Aveiro		35,4	58,5	66,2	30,6
201-300	151-200	151-200	59-80	6-9	2	University of Lisbon		32,6	56,1	63	32,1
n/c	51-75	n/c				University of Coimbra					
300	200	200	80	9	2	Nº IES					

n/c - não consta



3.2.5 Instruments Science & Technology

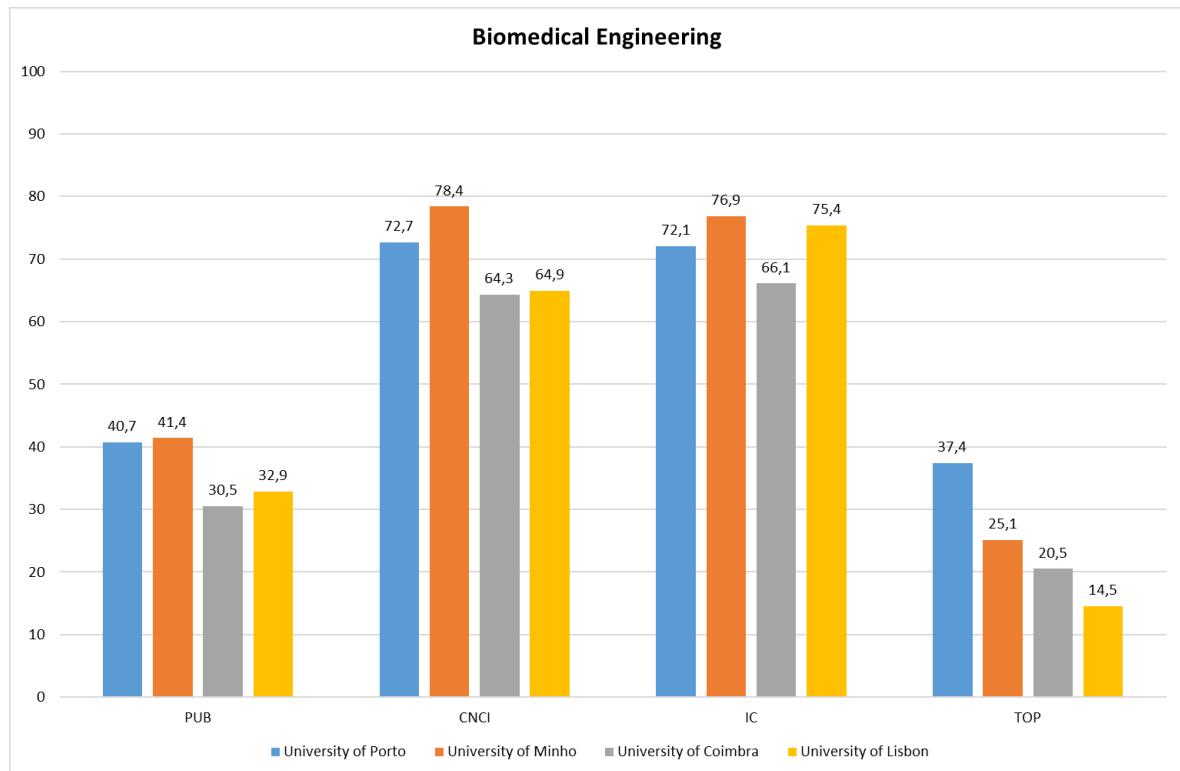
World Rank 19	World Rank 18	World Rank 17	Euro Rank	IbAm Rank	PT Rank	Institution	Total Score	PUB	CNCI	IC	TOP
101-150	51-75	51-75	32-52	6-9	1	University of Lisbon		62	57,4	77,7	32,2
151-200	51-75	101-150	53-74	10-12	2	University of Coimbra		42,9	69,7	87,9	31,1
201-300	201-300	201-300	75-123	13-21	3-4	University of Aveiro		37	61,4	88,4	20,9
201-300	151-200	151-200	75-123	13-21	3-4	University of Porto		36,4	64,7	78,1	31,5
300	300	300	123	21	4	Nº IES					



3.2.6 Biomedical Engineering

World Rank 19	World Rank 18	World Rank 17	Euro Rank	IbAm Rank	PT Rank	Institution	Total Score	PUB	CNCI	IC	TOP
76-100	101-150	151-200	19-26	1	1	University of Porto		40,7	72,7	72,1	37,4
101-150	101-150	76-100	27-45	2-4	2	University of Minho		41,4	78,4	76,9	25,1
201-300	201-300	n/c	65-108	6-13	3-4	University of Coimbra		30,5	64,3	66,1	20,5
201-300	201-300	201-300	65-108	6-13	3-4	University of Lisbon		32,9	64,9	75,4	14,5
300	300	300	108	13	4	Nº IES					

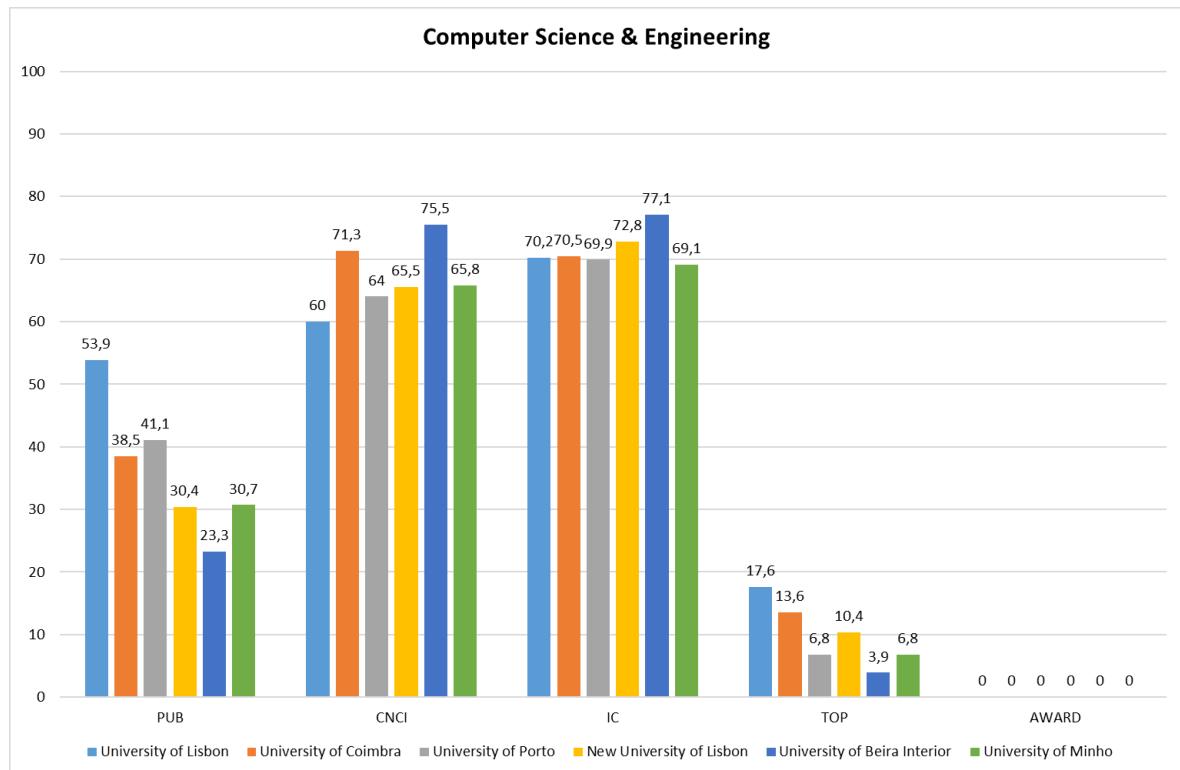
n/c - não consta



3.2.7 Computer Science & Engineering

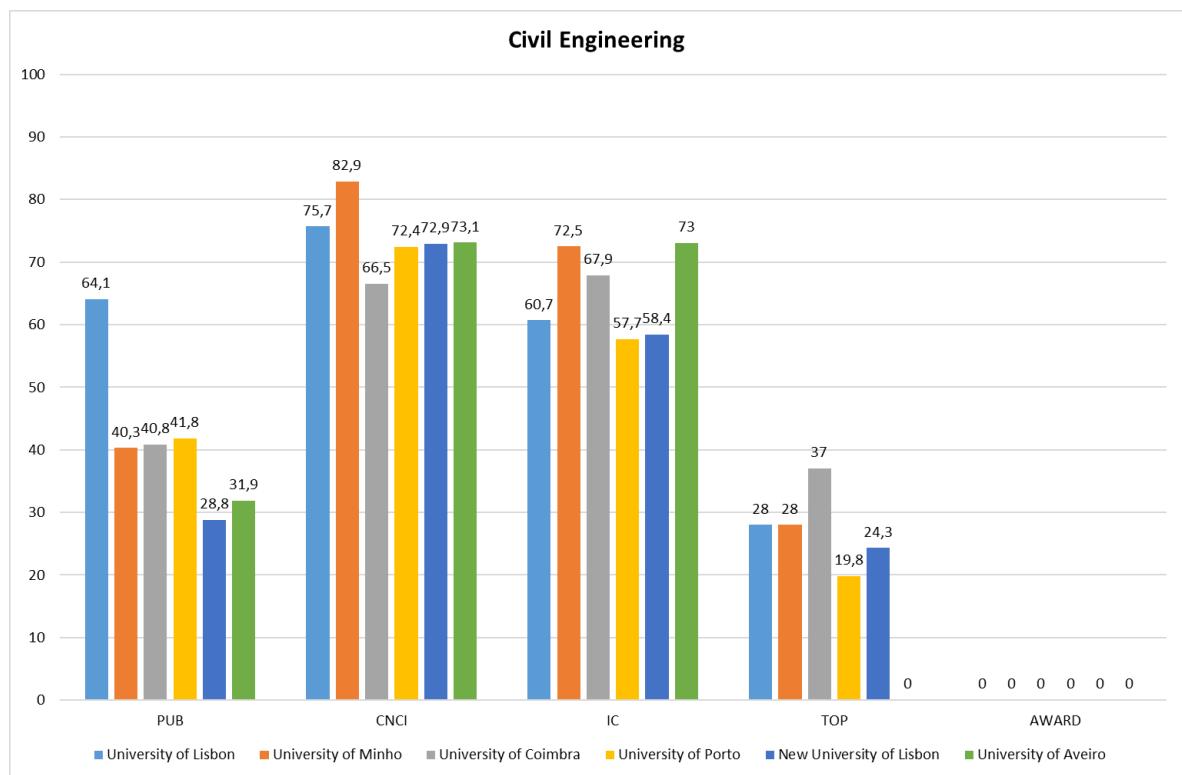
World Rank 19	World Rank 18	World Rank 17	Euro Rank	IbAm Rank	PT Rank	Institution	Total Score	PUB	CNCI	IC	TOP	AWARD
151-200	151-200	76-100	40-63	3	1	University of Lisbon		53,9	60	70,2	17,6	0
201-300	101-150	151-200	64-99	4-11	2	University of Coimbra		38,5	71,3	70,5	13,6	0
301-400	401-500	101-150	100-144	12-19	3	University of Porto		41,1	64	69,9	6,8	0
401-500	301-400	401-500	145-185	20-28	4-6	New University of Lisbon		30,4	65,5	72,8	10,4	0
401-500	401-500	n/c	145-185	20-28	4-6	University of Beira Interior		23,3	75,5	77,1	3,9	0
401-500	401-500	301-400	145-185	20-28	4-6	University of Minho		30,7	65,8	69,1	6,8	0
n/c	n/c	401-500				University of Aveiro						
500	500	500	185	28	6	Nº IES						

n/c - não consta



3.2.8 Civil Engineering

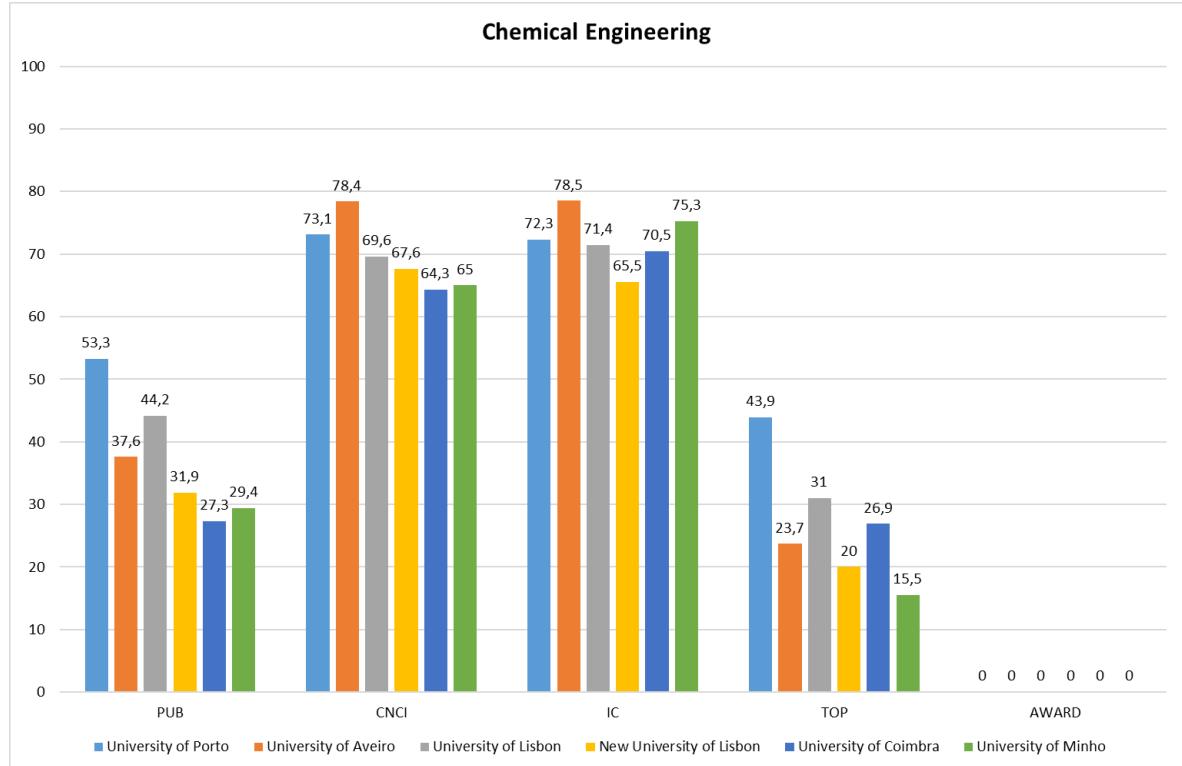
World Rank19	World Rank18	World Rank17	Euro Rank	IbAm Rank	PT Rank	Institution	Total Score	PUB	CNCI	IC	TOP	AWARD
48	45	43	9	2	1	University of Lisbon	179,9	64,1	75,7	60,7	28	0
51-75	76-100	76-100	11-18	3-4	2	University of Minho		40,3	82,9	72,5	28	0
76-100	51-75	51-75	19-23	5	3	University of Coimbra		40,8	66,5	67,9	37	0
101-150	101-150	201-300	24-39	6	4	University of Porto		41,8	72,4	57,7	19,8	0
151-200	151-200	151-200	40-55	7-9	5	New University of Lisbon		28,8	72,9	58,4	24,3	0
201-300	201-300	201-300	56-94	10-17	6	University of Aveiro		31,9	73,1	73	0	0
300	300	300	94	17	6	Nº IES						



3.2.9 Chemical Engineering

World Rank 19	World Rank 18	World Rank 17	Euro Rank	IbAm Rank	PT Rank	Institution	Total Score	PUB	CNCI	IC	TOP	AWARD
51-75	41	29	7-13	1	1	University of Porto		53,3	73,1	72,3	43,9	0
101-150	101-150	101-150	17-31	3-5	2-3	University of Aveiro		37,6	78,4	78,5	23,7	0
101-150	101-150	101-150	17-31	3-5	2-3	University of Lisbon		44,2	69,6	71,4	31	0
301-400	201-300	201-300	83-120	21-40	4-6	New University of Lisbon		31,9	67,6	65,5	20	0
301-400	201-300	n/c	83-120	21-40	4-6	University of Coimbra		27,3	64,3	70,5	26,9	0
301-400	301-400	201-300	83-120	21-40	4-6	University of Minho		29,4	65	75,3	15,5	0
500	500	300	153	52	6	Nº IES						

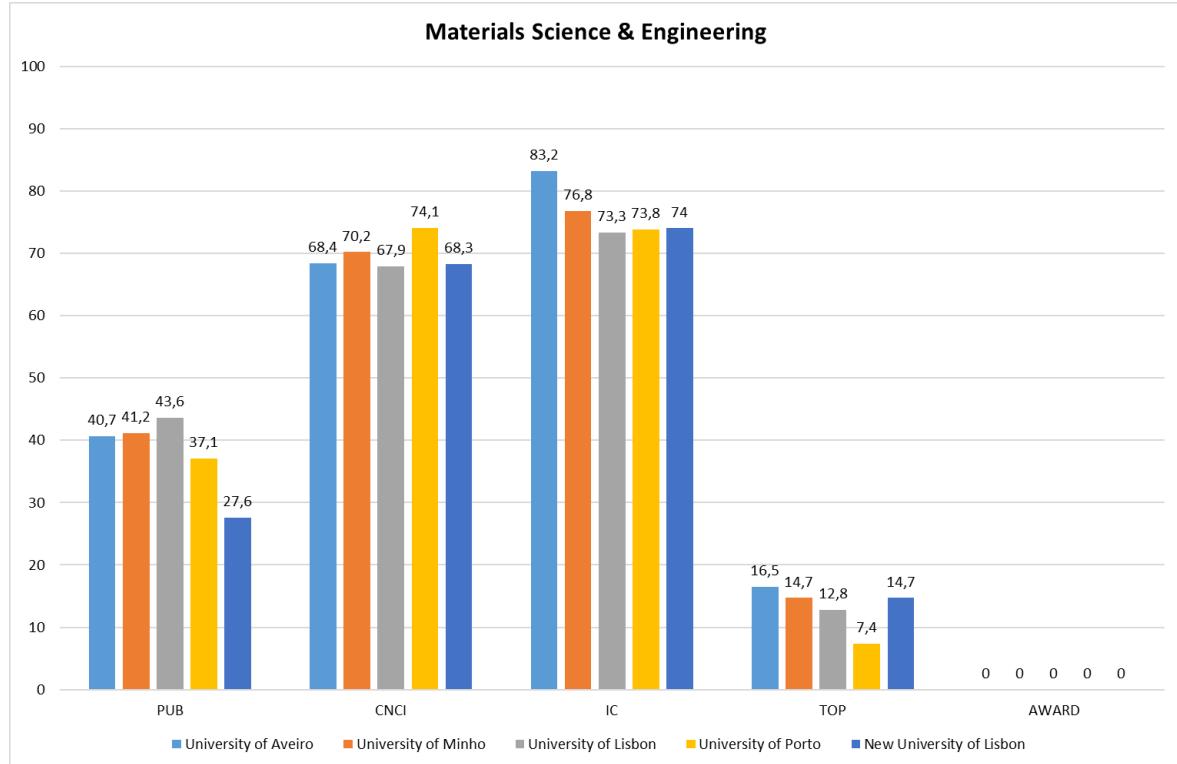
n/c - não consta



3.2.10 Materials Science & Engineering

World Rank 19	World Rank 18	World Rank 17	Euro Rank	IbAm Rank	PT Rank	Institution	Total Score	PUB	CNCI	IC	TOP	AWARD
201-300	301-400	201-300	50-94	4-10	1-2	University of Aveiro		40,7	68,4	83,2	16,5	0
201-300	301-400	301-400	50-94	4-10	1-2	University of Minho		41,2	70,2	76,8	14,7	0
301-400	201-300	201-300	95-137	11-16	3-4	University of Lisbon		43,6	67,9	73,3	12,8	0
301-400	201-300	201-300	95-137	11-16	3-4	University of Porto		37,1	74,1	73,8	7,4	0
401-500	401-500	401-500	138-185	17-18	5	New University of Lisbon		27,6	68,3	74	14,7	0
n/c	401-500	401-500				University of Coimbra						
500	500	500	185	18	5	Nº IES						

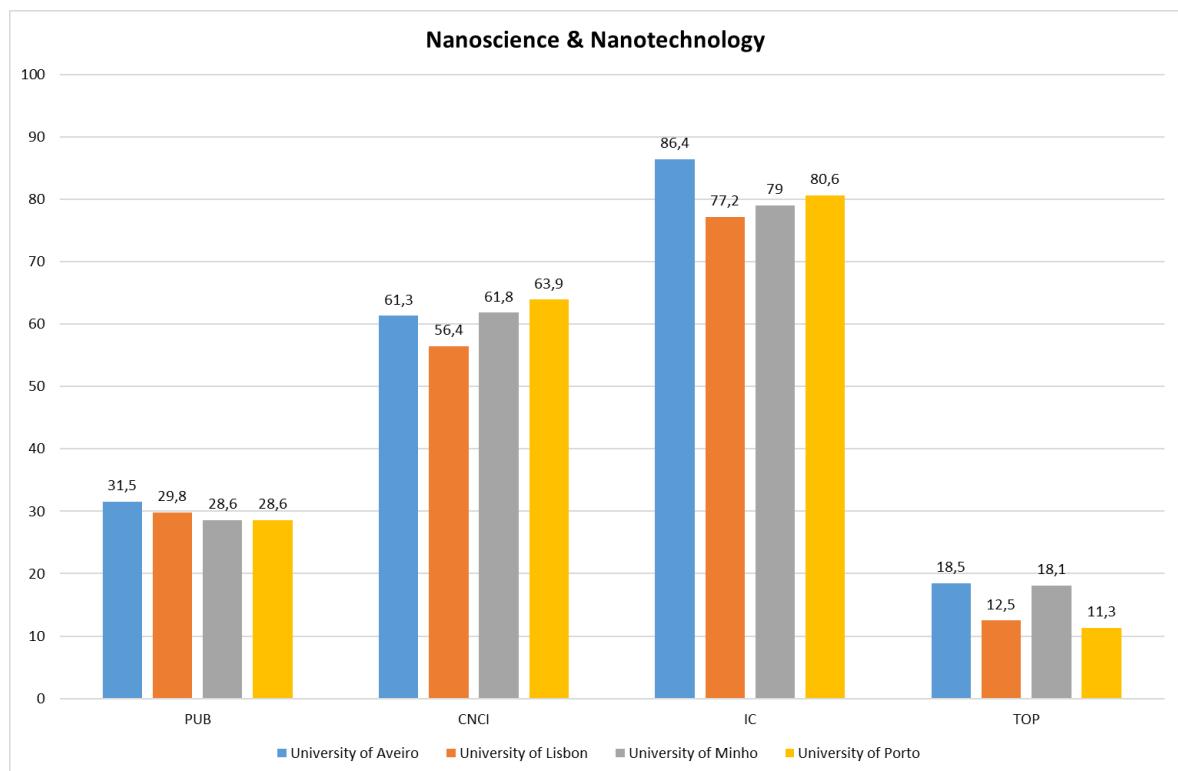
n/c - não consta



3.2.11 Nanoscience & Nanotechnology

Em 2017, não havia nenhuma IES portuguesa entre as 300 listadas.

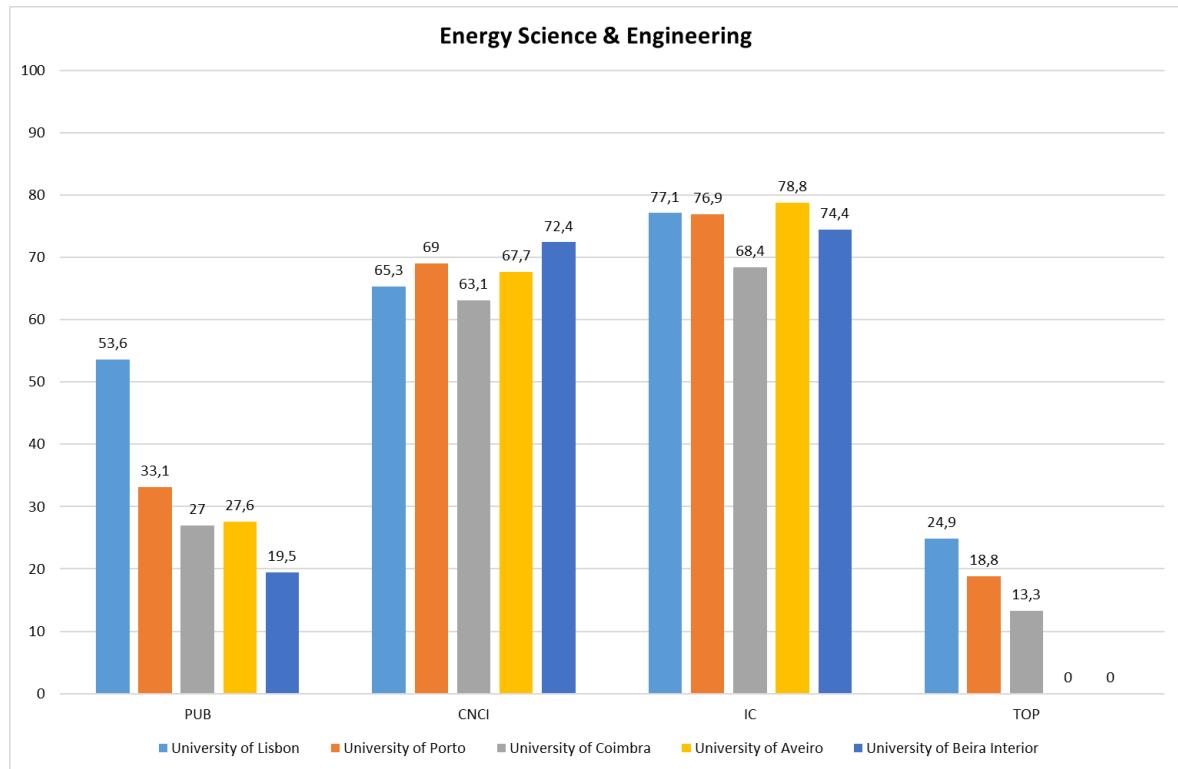
World Rank19	World Rank18	Euro Rank	IbAm Rank	PT Rank	Institution	Total Score	PUB	CNCI	IC	TOP
301-400	201-300	93-126	7-16	1-4	University of Aveiro		31,5	61,3	86,4	18,5
301-400	301-400	93-126	7-16	1-4	University of Lisbon		29,8	56,4	77,2	12,5
301-400	301-400	93-126	7-16	1-4	University of Minho		28,6	61,8	79	18,1
301-400	301-400	93-126	7-16	1-4	University of Porto		28,6	63,9	80,6	11,3
400	400	126	16	4	Nº IES					



3.2.12 Energy Science & Engineering

World Rank 19	World Rank 18	World Rank 17	Euro Rank	IbAm Rank	PT Rank	Institution	Total Score	PUB	CNCI	IC	TOP
101-150	101-150	151-200	22-36	1-2	1	University of Lisbon		53,6	65,3	77,1	24,9
201-300	201-300	201-300	54-91	5-13	2	University of Porto		33,1	69	76,9	18,8
301-400	201-300	n/c	92-134	14-19	3	University of Coimbra		27	63,1	68,4	13,3
401-500	301-400	201-300	135-168	20-30	4-5	University of Aveiro		27,6	67,7	78,8	0
401-500	n/c	n/c	135-168	20-30	4-5	University of Beira Interior		19,5	72,4	74,4	0
n/c	401-500	n/c				New University of Lisbon					
500	500	300	168	30	5	Nº IES					

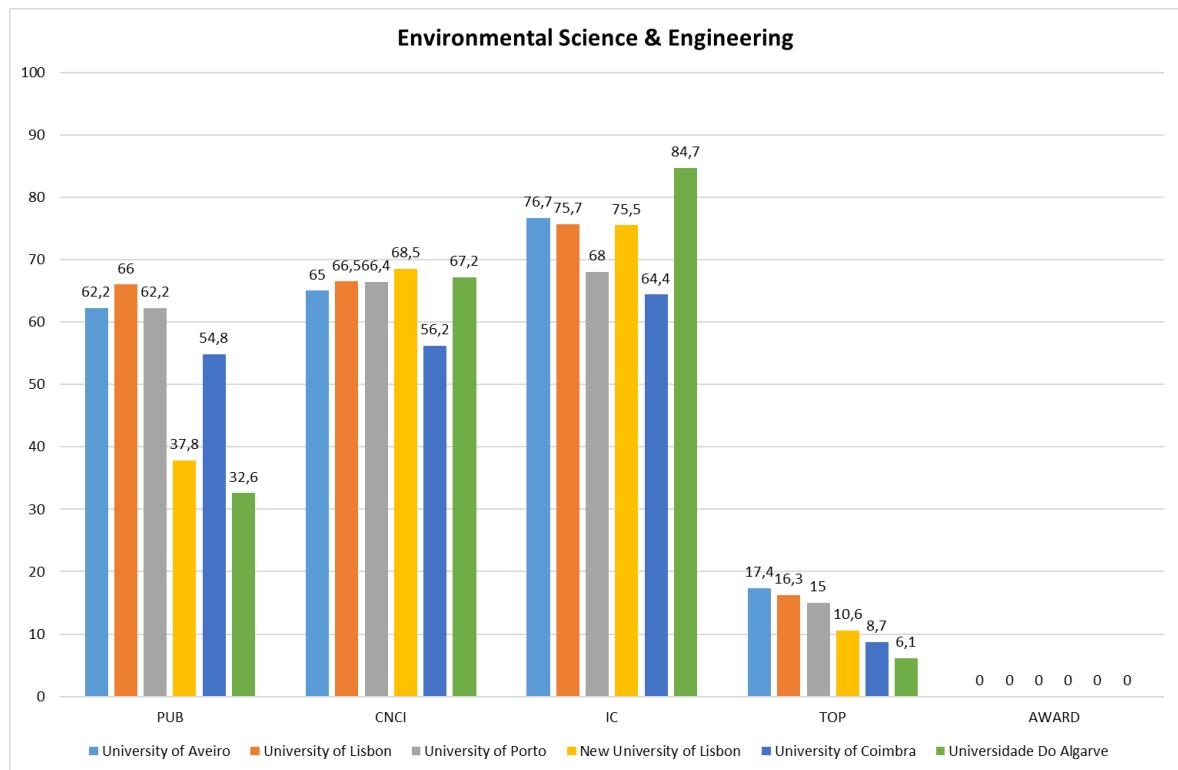
n/c - não consta



3.2.13 Environmental Science & Engineering

World Rank19	World Rank18	World Rank17	Euro Rank	IbAm Rank	PT Rank	Institution	Total Score	PUB	CNCI	IC	TOP	AWARD
151-200	151-200	151-200	44-67	5-8	1-3	University of Aveiro		62,2	65	76,7	17,4	0
151-200	101-150	101-150	44-67	5-8	1-3	University of Lisbon		66	66,5	75,7	16,3	0
151-200	151-200	151-200	44-67	5-8	1-3	University of Porto		62,2	66,4	68	15	0
301-400	301-400	301-400	111-157	14-22	4-5	New University of Lisbon		37,8	68,5	75,5	10,6	0
301-400	301-400	301-400	111-157	14-22	4-5	University of Coimbra		54,8	56,2	64,4	8,7	0
401-500	401-500	n/c	158-199	23-36	6	Universidade do Algarve		32,6	67,2	84,7	6,1	0
n/c	401-500	n/c				University of Minho						
500	500	500	199	36	6	Nº IES						

n/c - não consta



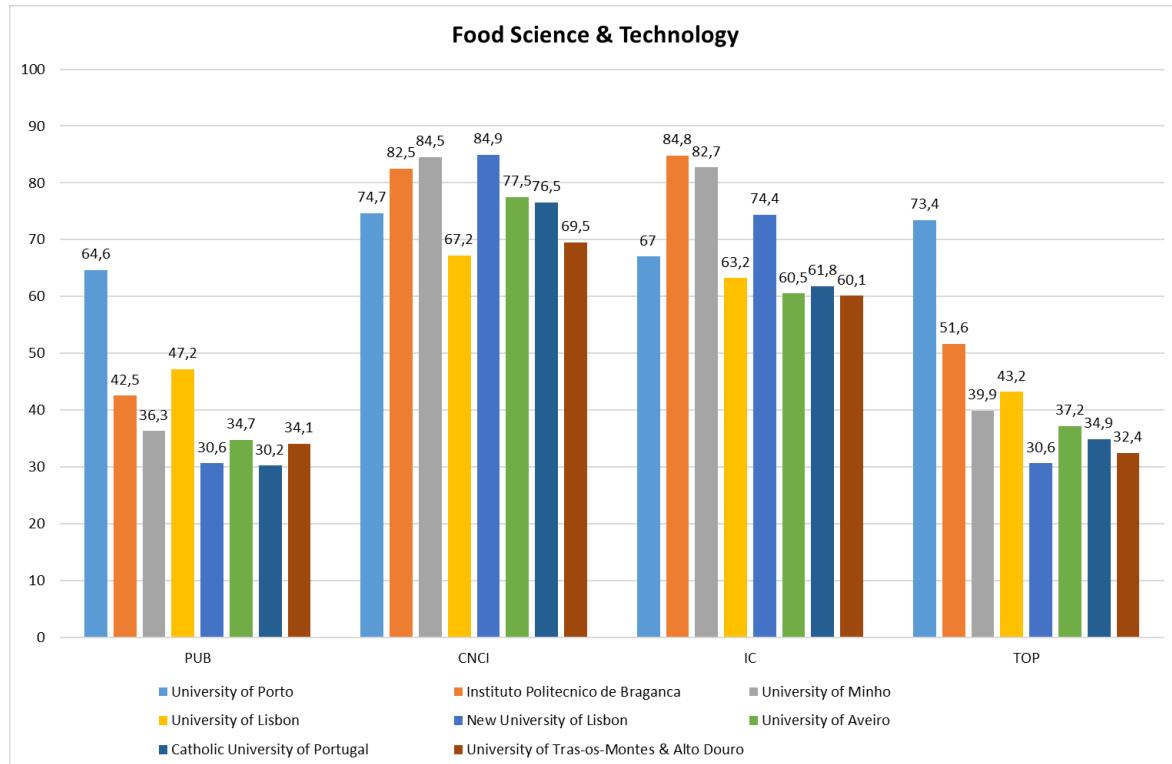
3.2.14 Water Resources

World Rank 19	World Rank 18	World Rank 17	Euro Rank	IbAm Rank	PT Rank	Institution	Total Score	PUB	CNCI	IC	TOP	AWARD
51-75	51-75	18	15-25	1-2	1	University of Lisbon		70,0	71,7	78,6	42,8	0
n/c	n/c	151-200				University of Porto						
200	200	200	74	7	1	Nº IES						

3.2.15 Food Science & Technology

World Rank19	World Rank18	World Rank17	Euro Rank	IbAm Rank	PT Rank	Institution	Total Score	PUB	CNCI	IC	TOP
11	12	11	3	3	1	University of Porto	226,1	64,6	74,7	67	73,4
35	33	50	16	6	2	Instituto Politecnico de Braganca	193,6	42,5	82,5	84,8	51,6
51-75	51-75	76-100	23-31	10-15	3	University of Minho		36,3	84,5	82,7	39,9
76-100	76-100	51-75	32-43	16-20	4	University of Lisbon		47,2	67,2	63,2	43,2
101-150	101-150	101-150	44-67	21-31	5-6	New University of Lisbon		30,6	84,9	74,4	30,6
101-150	101-150	101-150	44-67	21-31	5-6	University of Aveiro		34,7	77,5	60,5	37,2
151-200	101-150	101-150	68-90	32-43	7	Catholic University of Portugal		30,2	76,5	61,8	34,9
201-300	201-300	201-300	91-114	44-62	8	University of Tras-os-Montes & Alto Douro		34,1	69,5	60,1	32,4
n/c	n/c	201-300				University of Coimbra					
300	300	300	114	62	8	Nº IES					

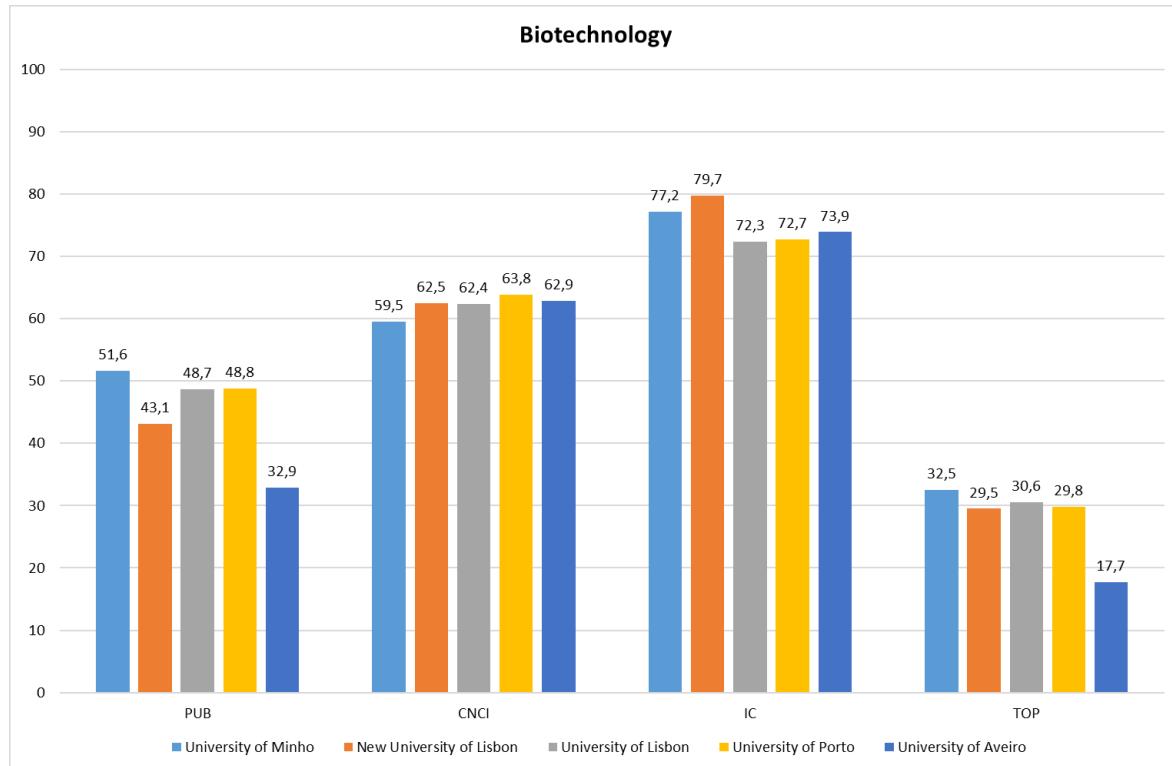
n/c - não consta



3.2.16 Biotechnology

World Rank19	World Rank18	World Rank17	Euro Rank	IbAm Rank	PT Rank	Institution	Total Score	PUB	CNCI	IC	TOP
151-200	151-200	151-200	49-69	5-6	1	University of Minho		51,6	59,5	77,2	32,5
201-300	201-300	151-200	70-116	7-12	2-4	New University of Lisbon		43,1	62,5	79,7	29,5
201-300	151-200	201-300	70-116	7-12	2-4	University of Lisbon		48,7	62,4	72,3	30,6
201-300	151-200	201-300	70-116	7-12	2-4	University of Porto		48,8	63,8	72,7	29,8
401-500	301-400	n/c	158-180	23-37	5	University of Aveiro		32,9	62,9	73,9	17,7
n/c	401-500	n/c				University of Coimbra					
500	500	300	180	37	5	Nº IES					

n/c - não consta



3.2.17 Aerospace Engineering

Como em 2017 e 2018, não há nenhuma IES portuguesa entre as 50 listadas.

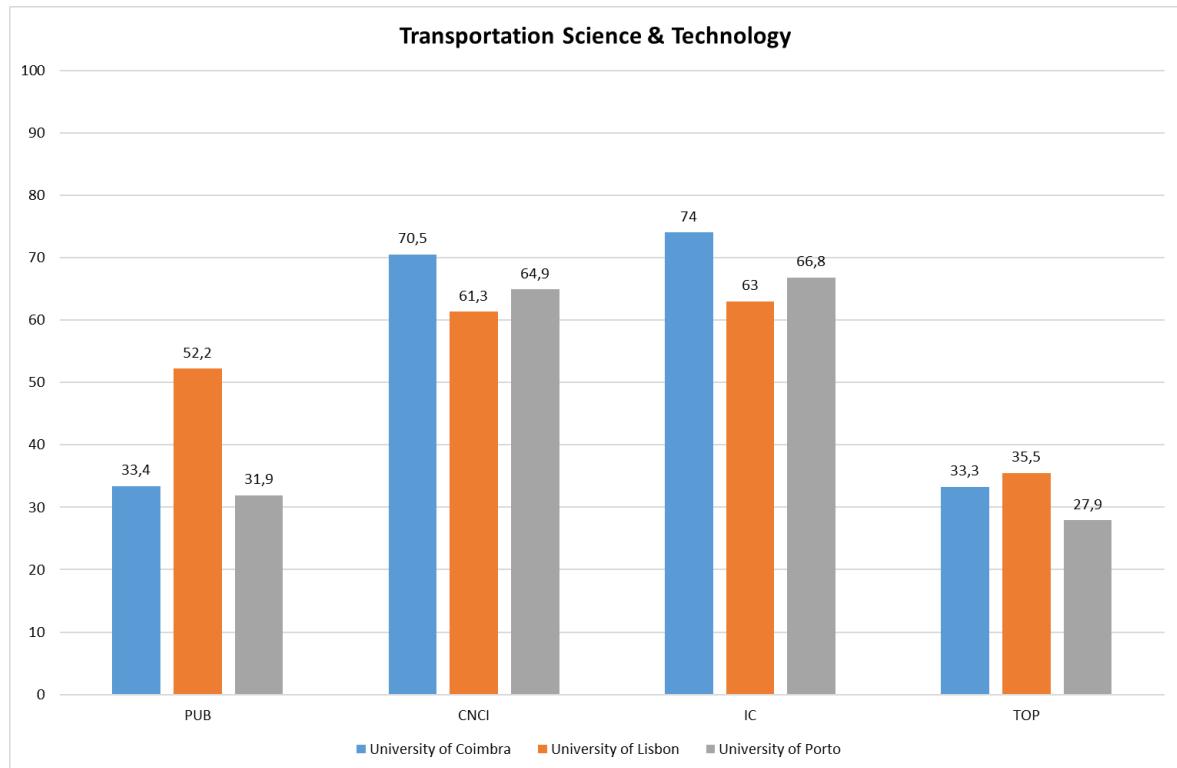
3.2.18 Marine/Ocean Engineering

World Rank 19	World Rank 18	World Rank 17	Euro Rank	IbAm Rank	PT Rank	Institution	Total Score	PUB	CNCI	IC	TOP
5	4	3	2	1	1	University of Lisbon	221,8	67,5	78,1	66,9	62,8
50	50	50	14	3	1	Nº IES					

3.2.19 Transportation Science & Technology

World Rank 19	World Rank 18	World Rank 17	Euro Rank	IbAm Rank	PT Rank	Institution	Total Score	PUB	CNCI	IC	TOP
101-150	51-75	76-100	24-43	3-6	1-2	University of Coimbra		33,4	70,5	74	33,3
101-150	101-150	76-100	24-43	3-6	1-2	University of Lisbon		52,2	61,3	63	35,5
151-200	151-200	n/c	44-60	7-12	3	University of Porto		31,9	64,9	66,8	27,9
200	200	100	60	12	3	Nº IES					

n/c - não consta



3.2.20 Remote Sensing

World Rank 19	World Rank 18	World Rank 17	Euro Rank	IbAm Rank	PT Rank	Institution	Total Score	PUB	CNCI	IC	TOP
19	10	8	10	2	1	University of Lisbon	175,4	26,8	89,4	94,5	40,4
n/c	11	n/c				University of Coimbra					
100	100	50	34	4	1	Nº IES					

n/c - não consta

3.2.21 Mining & Mineral Engineering

Como em 2017 e 2018, não há nenhuma IES portuguesa entre as 100 listadas (50 em 2017).

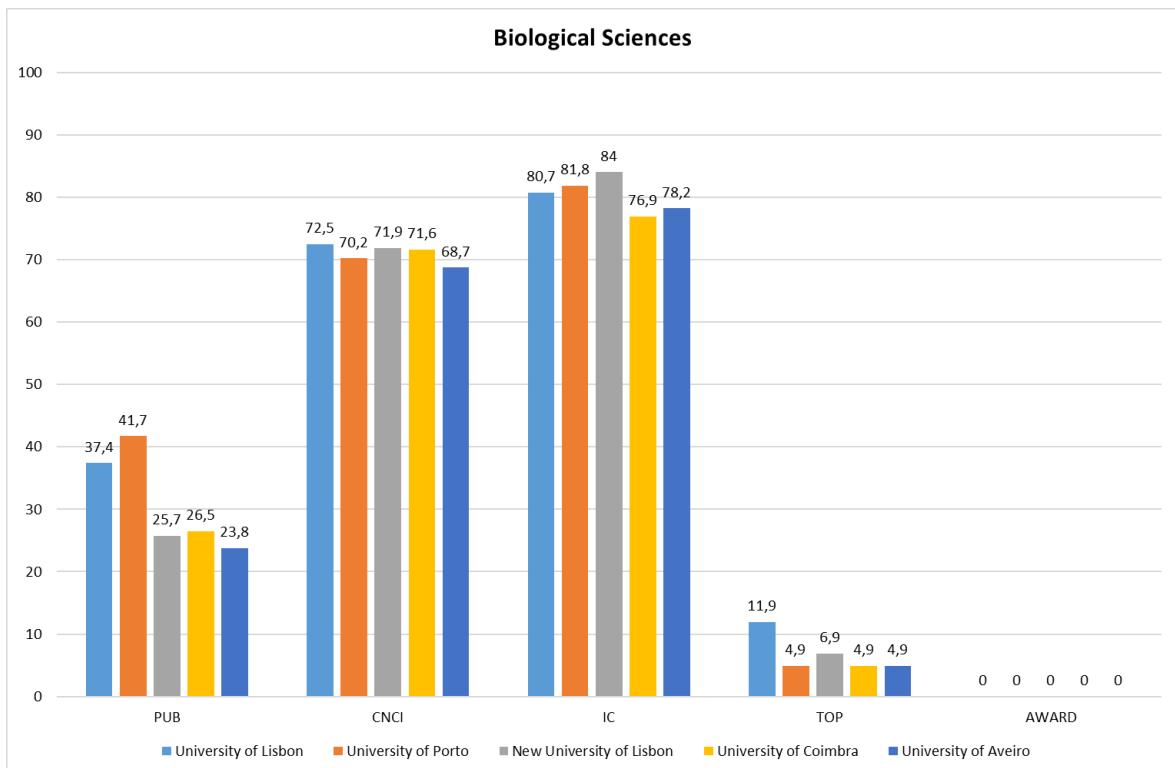
3.2.22 Metallurgical Engineering

Como em 2018, não há nenhuma IES portuguesa entre as 200 listadas. Em 2017, a U.Aveiro estava em 101-150 e Universidade de Lisboa em 151-200.

3.3 LIFE SCIENCES

3.3.1 Biological Sciences

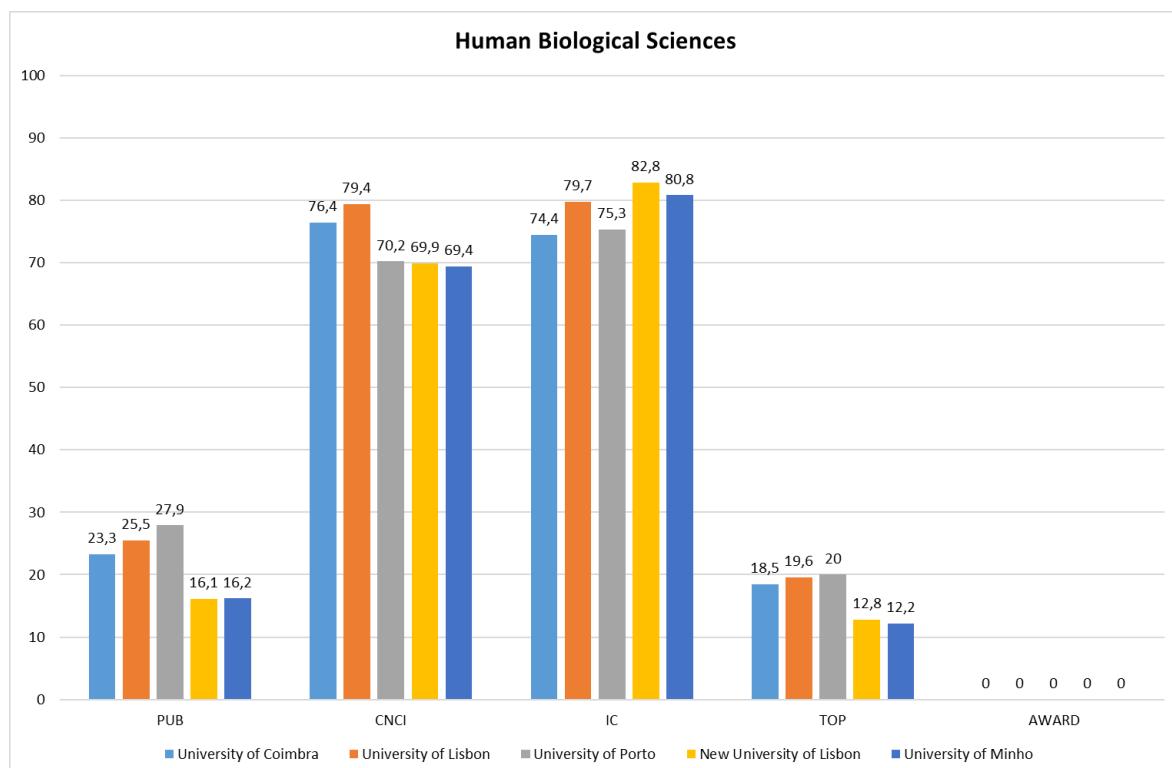
World Rank 19	World Rank 18	World Rank17	Euro Rank	IbAm Rank	PT Rank	Institution	Total Score	PUB	CNCI	IC	TOP	AWARD
151-200	151-200	201-300	69-98	4	1	University of Lisbon		37,4	72,5	80,7	11,9	0
201-300	151-200	201-300	99-143	5-8	2	University of Porto		41,7	70,2	81,8	4,9	0
301-400	301-400	301-400	144-182	9-17	3-4	New University of Lisbon		25,7	71,9	84	6,9	0
301-400	301-400	301-400	144-182	9-17	3-4	University of Coimbra		26,5	71,6	76,9	4,9	0
401-500	401-500	401-500	183-239	18-31	5	University of Aveiro		23,8	68,7	78,2	4,9	0
500	500	500	239	31	5	Nº IES						



3.3.2 Human Biological Sciences

World Rank19	World Rank18	World Rank17	Euro Rank	IbAm Rank	PT Rank	Institution	Total Score	PUB	CNCI	IC	TOP	AWARD
201-300	201-300	201-300	96-141	4-9	1-3	University of Coimbra		23,3	76,4	74,4	18,5	0
201-300	201-300	201-300	96-141	4-9	1-3	University of Lisbon		25,5	79,4	79,7	19,6	0
201-300	201-300	201-300	96-141	4-9	1-3	University of Porto		27,9	70,2	75,3	20	0
401-500	401-500	401-500	178-223	17-29	4-5	New University of Lisbon		16,1	69,9	82,8	12,8	0
401-500	n/c	n/c	178-223	17-29	4-5	University of Minho		16,2	69,4	80,8	12,2	0
500	500	500	223	29	5	Nº IES						

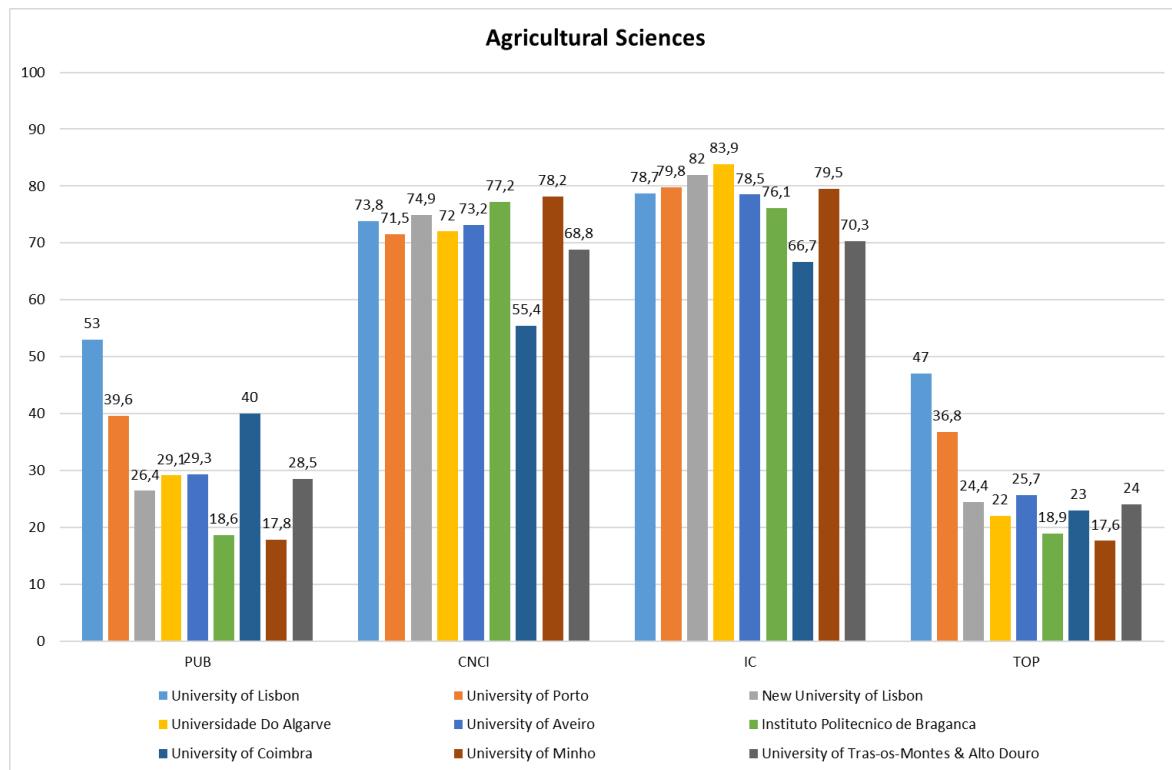
n/c - não consta



3.3.3 Agricultural Sciences

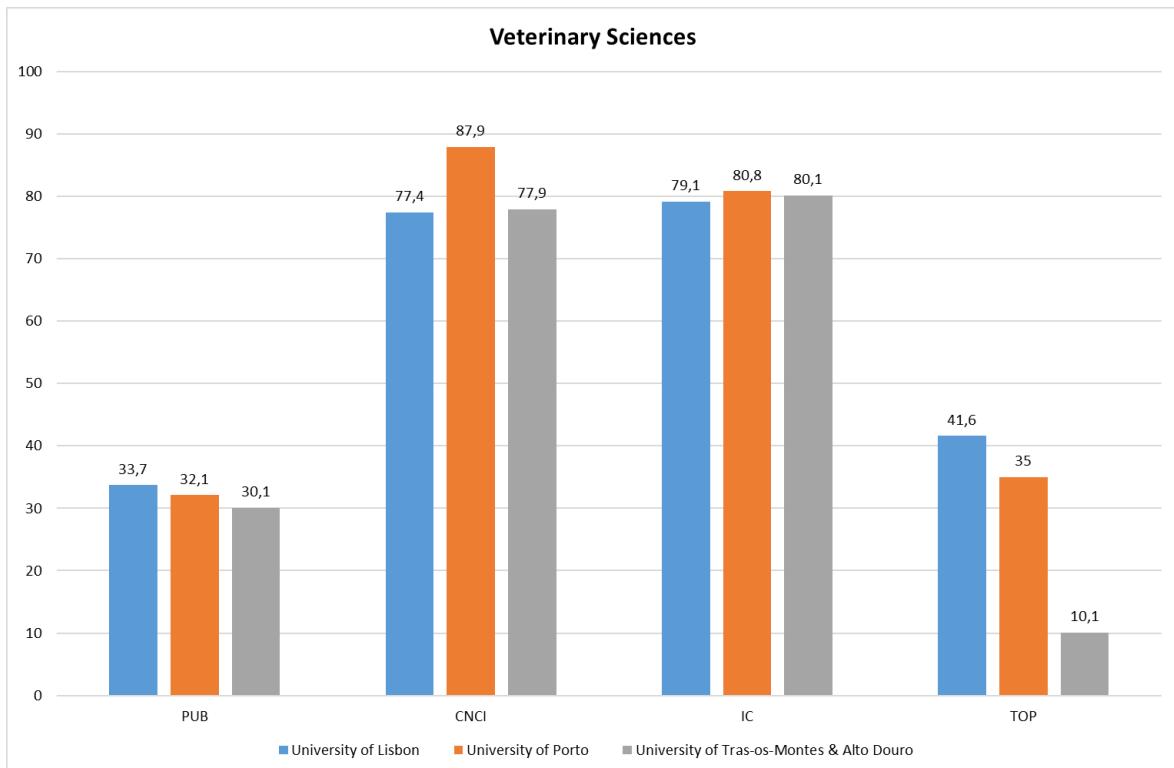
World Rank19	World Rank18	World Rank17	Euro Rank	IbAm Rank	PT Rank	Institution	Total Score	PUB	CNCI	IC	TOP
51-75	51-75	51-75	14-27	3-7	1	University of Lisbon		53	73,8	78,7	47
101-150	151-200	151-200	43-69	11-14	2	University of Porto		39,6	71,5	79,8	36,8
301-400	301-400	301-400	145-184	27-41	3-5	New University of Lisbon		26,4	74,9	82	24,4
301-400	301-400	301-400	145-184	27-41	3-5	Universidade do Algarve		29,1	72	83,9	22
301-400	201-300	301-400	145-184	27-41	3-5	University of Aveiro		29,3	73,2	78,5	25,7
401-500	401-500	n/c	185-228	42-62	6-9	Instituto Politecnico de Braganca		18,6	77,2	76,1	18,9
401-500	401-500	301-400	185-228	42-62	6-9	University of Coimbra		40	55,4	66,7	23
401-500	401-500	n/c	185-228	42-62	6-9	University of Minho		17,8	78,2	79,5	17,6
401-500	401-500	401-500	185-228	42-62	6-9	University of Tras-os-Montes & Alto Douro		28,5	68,8	70,3	24
500	500	500	228	62	9	Nº IES					

n/c - não consta



3.3.4 Veterinary Sciences

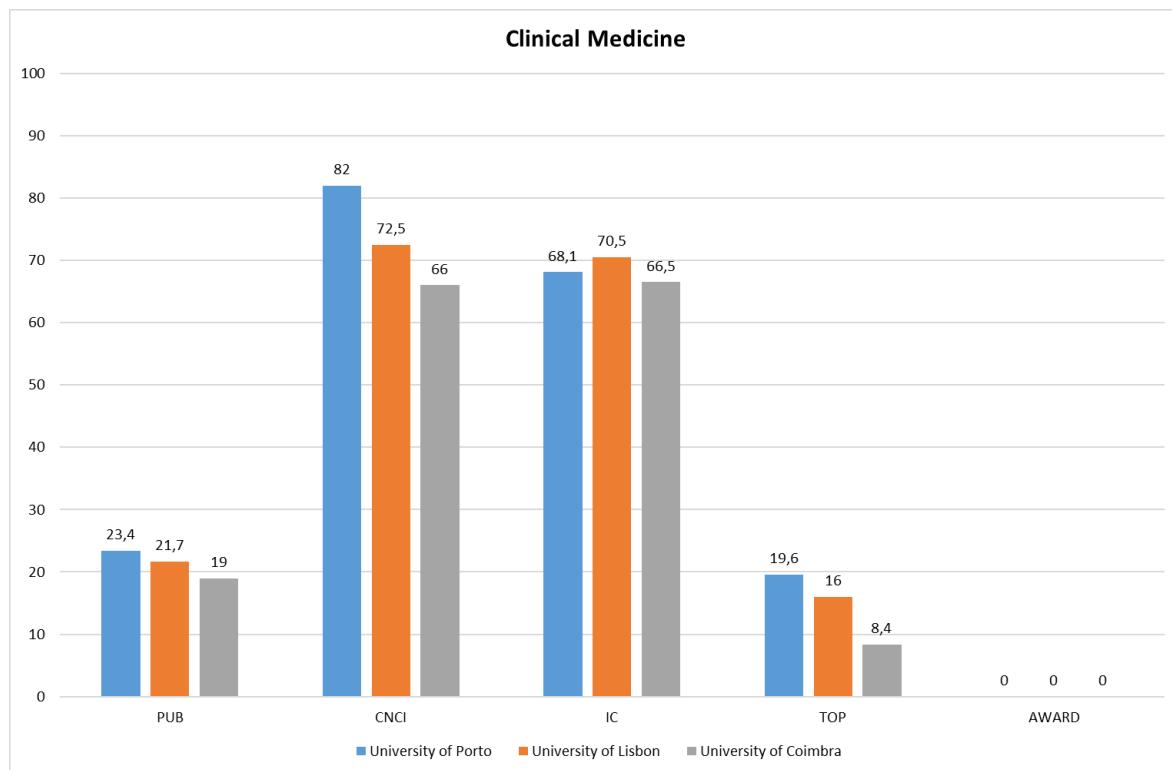
World Rank 19	World Rank 18	World Rank 17	Euro Rank	IbAm Rank	PT Rank	Institution	Total Score	PUB	CNCI	IC	TOP
51-75	51-75	101-150	25-39	6-9	1-2	University of Lisbon		33,7	77,4	79,1	41,6
51-75	51-75	51-75	25-39	6-9	1-2	University of Porto		32,1	87,9	80,8	35
151-200	151-200	101-150	72-83	19-28	3	University of Tras-os-Montes & Alto Douro		30,1	77,9	80,1	10,1
300	300	200	97	53	3	Nº IES					



3.4 MEDICAL SCIENCES

3.4.1 Clinical Medicine

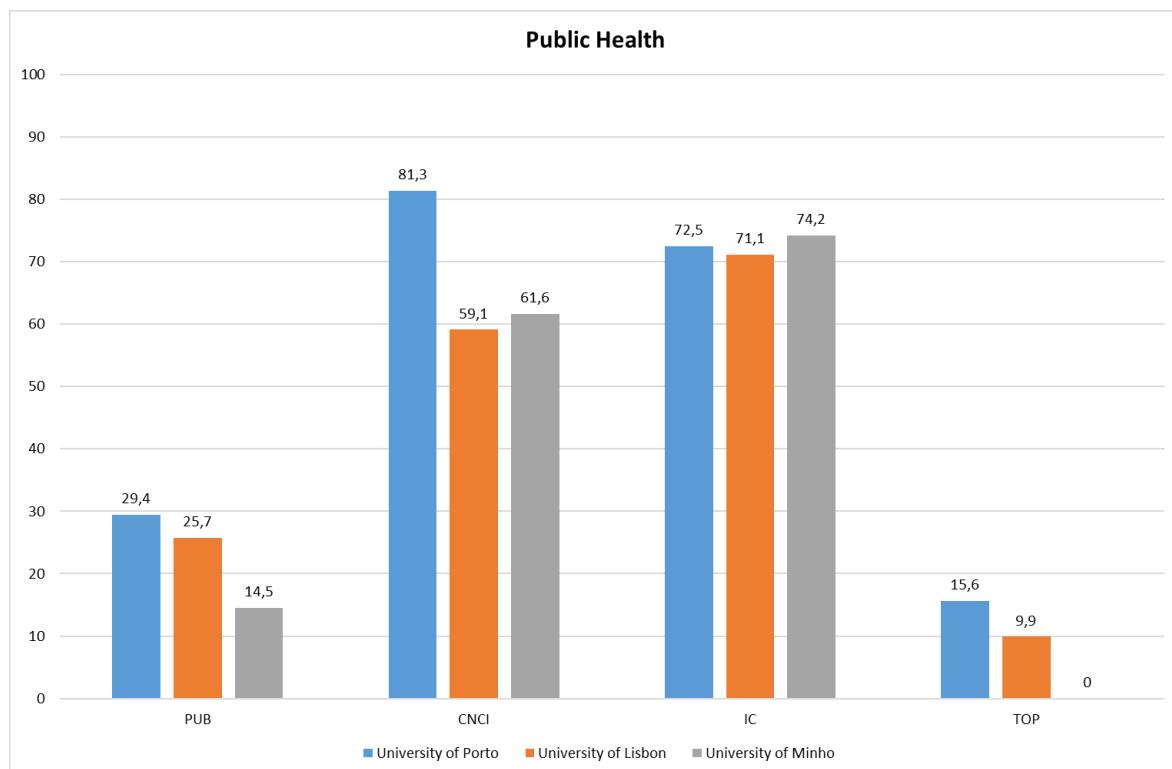
World Rank19	World Rank18	World Rank17	Euro Rank	IbAm Rank	PT Rank	Institution	Total Score	PUB	CNCI	IC	TOP	AWARD
201-300	301-400	301-400	87-128	6-14	1	University of Porto		23,4	82	68,1	19,6	0
301-400	301-400	301-400	129-172	15-21	2	University of Lisbon		21,7	72,5	70,5	16	0
401-500	401-500	401-500	173-219	22-25	3	University of Coimbra		19	66	66,5	8,4	0
500	500	500	219	25	3	Nº IES						



3.4.2 Public Health

World Rank19	World Rank18	World Rank17	Euro Rank	IbAm Rank	PT Rank	Institution	Total Score	PUB	CNCI	IC	TOP
101-150	151-200	151-200	38-62	5	1	University of Porto		29,4	81,3	72,5	15,6
301-400	301-400	301-400	114-159	13-21	2	University of Lisbon		25,7	59,1	71,1	9,9
401-500	n/c	401-500	160-204	22-37	3	University of Minho					
n/c	401-500	n/c				University of Coimbra					
n/c	401-500	301-400				New University of Lisbon					
500	500	500	204	37	3	Nº IES					

n/c - não consta



3.4.3 Dentistry & Oral Sciences

Em 2017 não havia nenhuma IES portuguesa entre as 200 listadas.

World Rank19	World Rank18	Euro Rank	IbAm Rank	PT Rank	Institution	Total Score	PUB	CNCI	IC	TOP	AWARD
201-300	201-300	79-119	20-38	1	University of Porto		22,2	58,9	58,4	15,4	0
300	300	119	38	1	Nº IES						

3.4.4 Nursing

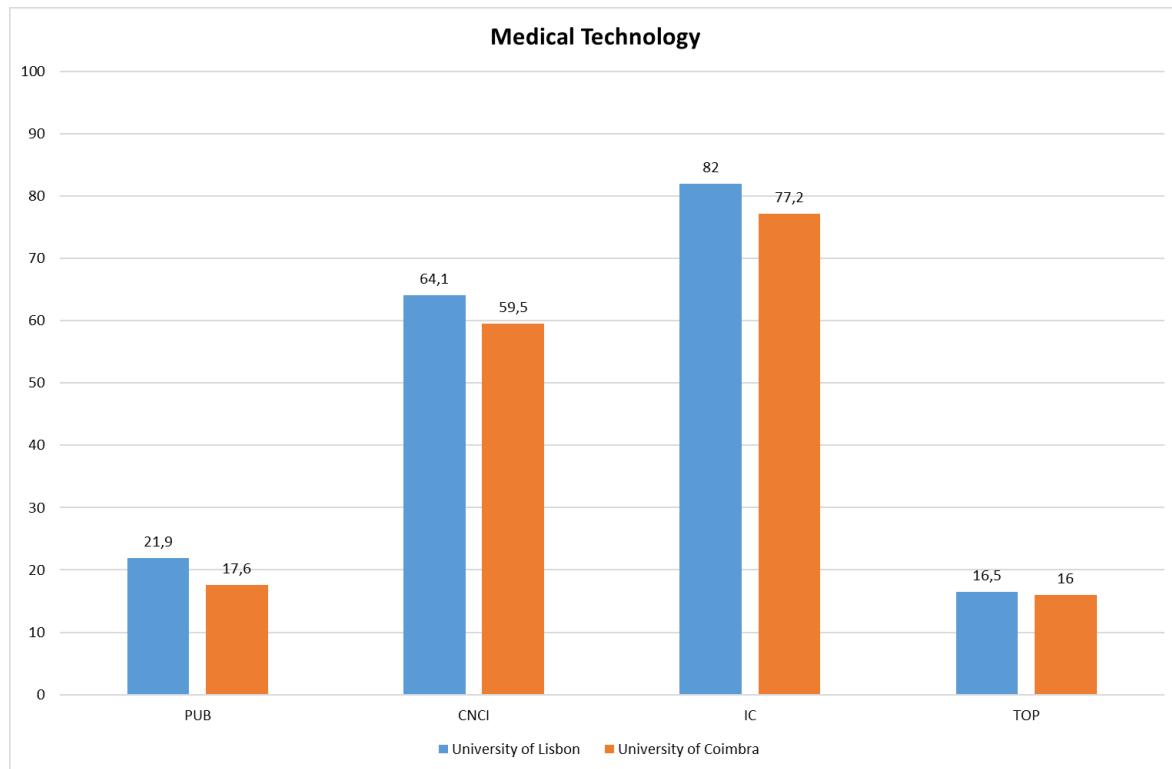
Em 2018 e 2017 não havia nenhuma IES portuguesa entre as 300 listadas (100 em 2017).

World Rank19	Euro Rank	IbAm Rank	PT Rank	Institution	Total Score	PUB	CNCI	IC	TOP	AWARD
101-150	33-54	2-4	1	University of Coimbra		24,5	76	88,2	28,5	0
300	91	9	1	Nº IES						

3.4.5 Medical Technology

Em 2017, não havia nenhuma IES portuguesa entre as 200 listadas.

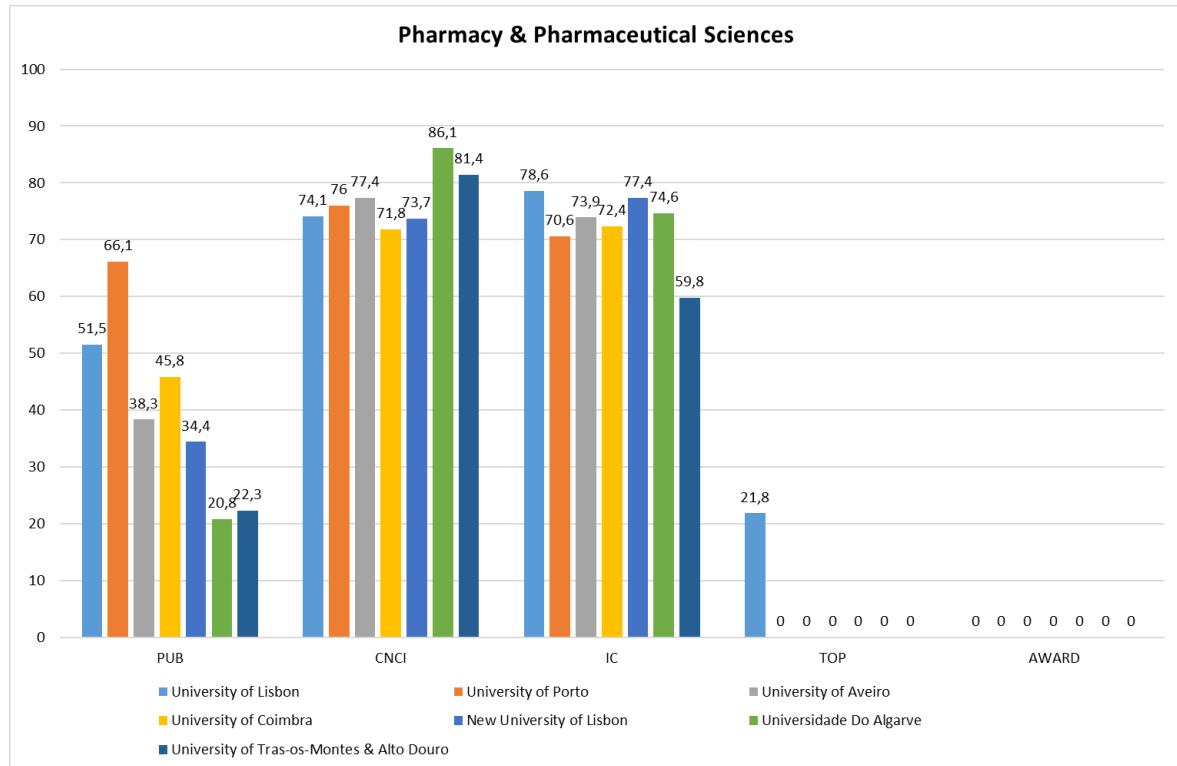
World Rank19	World Rank18	Euro Rank	IbAm Rank	PT Rank	Institution	Total Score	PUB	CNCI	IC	TOP
201-300	201-300	108-147	6-9	1	University of Lisbon		21,9	64,1	82,0	16,5
301-400	201-300	148-163	10-15	2	University of Coimbra		17,6	59,5	77,2	16,0
400	300	163	15	2						



3.4.6 Pharmacy & Pharmaceutical Sciences

World Rank19	World Rank18	World Rank17	Euro Rank	IbAm Rank	PT Rank	Institution	Total Score	PUB	CNCI	IC	TOP	AWARD
76-100	101-150	151-200	34-45	2-3	1	University of Lisbon		51,5	74,1	78,6	21,8	0
101-150	51-75	76-100	46-67	4-5	2	University of Porto		66,1	76	70,6	0	0
201-300	201-300	201-300	92-139	10-20	3-4	University of Aveiro		38,3	77,4	73,9	0	0
201-300	151-200	201-300	92-139	10-20	3-4	University of Coimbra		45,8	71,8	72,4	0	0
301-400	301-400	301-400	140-176	21-28	5-6	New University of Lisbon		34,4	73,7	77,4	0	0
301-400	n/c	n/c	140-176	21-28	5-6	Universidade Do Algarve		20,8	86,1	74,6	0	0
401-500	401-500	401-500	177-205	29-37	7	University of Tras-os-Montes & Alto Douro		22,3	81,4	59,8	0	0
500	500	500	205	37	7	Nº IES						

n/c - não consta

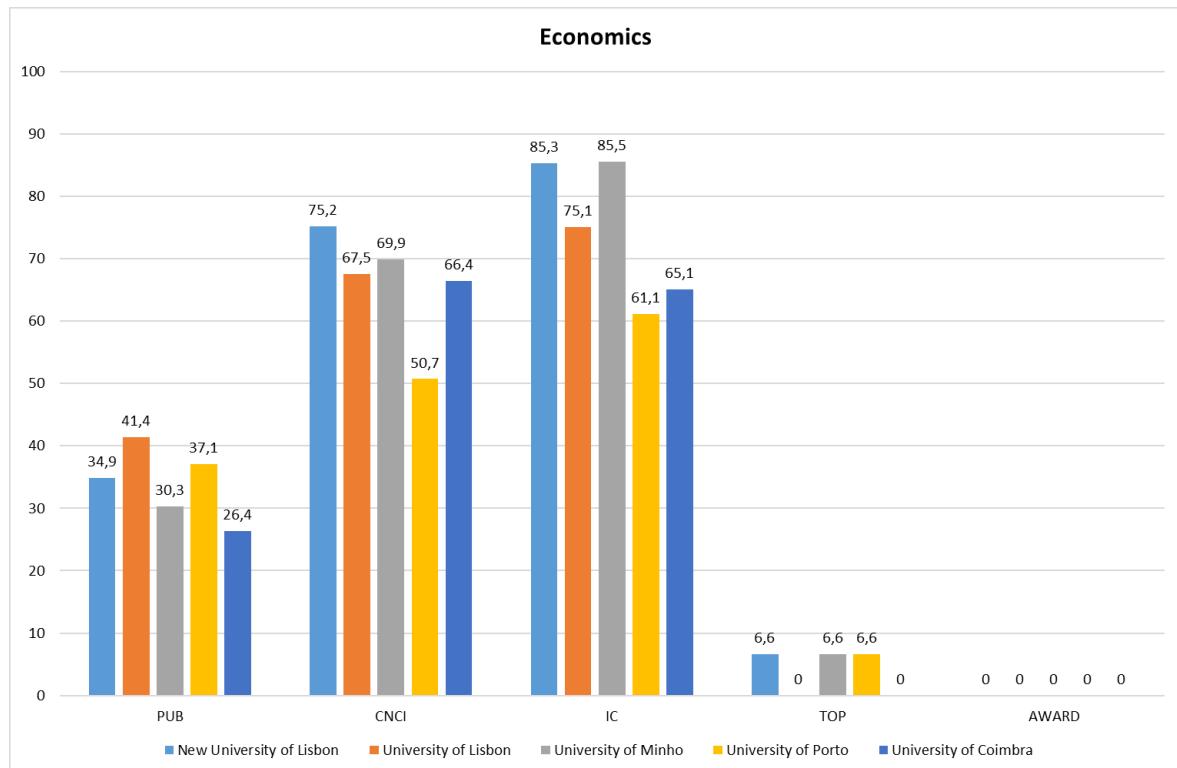


3.5 SOCIAL SCIENCES

3.5.1 Economics

World Rank19	World Rank18	World Rank17	Euro Rank	IbAm Rank	PT Rank	Institution	Total Score	PUB	CNCI	IC	TOP	AWARD
201-300	201-300	201-300	93-139	6-11	1-2	New University of Lisbon		34,9	75,2	85,3	6,6	0
201-300	201-300	201-300	93-139	6-11	1-2	University of Lisbon		41,4	67,5	75,1	0	0
301-400	201-300	201-300	140-196	12-24	3-4	University of Minho		30,3	69,9	85,5	6,6	0
301-400	201-300	n/c	140-196	12-24	3-4	University of Porto		37,1	50,7	61,1	6,6	0
401-500	401-500	n/c	197-236	25-32	5	University of Coimbra		26,4	66,4	65,1	0	0
500	500	300	236	32	5	Nº IES						

n/c - não consta



3.5.2 Statistics

World Rank19	World Rank18	World Rank17	Euro Rank	IbAm Rank	PT Rank	Institution	Total Score	PUB	CNCI	IC	TOP	AWARD
101-150	101-150	101-150	31-50	1-4	1	University of Lisbon		48,2	61,8	76,2	19,4	0
n/c	151-200	n/c				New University of Lisbon						
200	200	200	84	8	1	Nº IES						

n/c - não consta

3.5.3 Law

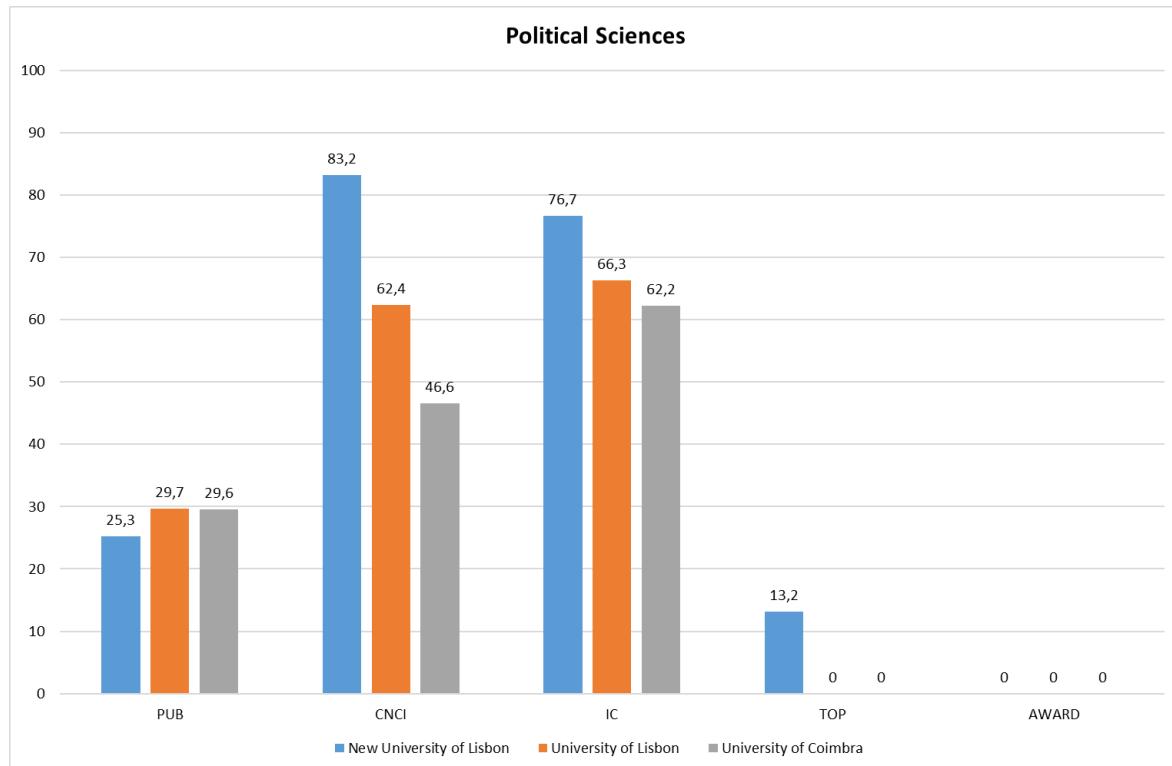
Em 2018 e 2017, não havia nenhuma IES portuguesa entre as 200 listadas (100, em 2017).

World Rank19	Euro Rank	IbAm Rank	PT Rank	Institution	Total Score	PUB	CNCI	IC	TOP
201-300	58-108	1-9	1	University of Coimbra		26	41,1	36,2	0
300	108	9	1	Nº IES					

3.5.4 Political Sciences

Em 2017, não havia nenhuma IES portuguesa entre as 200 listadas.

World Rank19	World Rank18	Euro Rank	IbAm Rank	PT Rank	Institution	Total Score	PUB	CNCI	IC	TOP	AWARD
151-200	201-300	61-84	3-4	1	New University of Lisbon		25,3	83,2	76,7	13,2	0
201-300	201-300	85-128	5-7	2	University of Lisbon		29,7	62,4	66,3	0	0
301-400	301-400	129-174	8-20	3	University of Coimbra		29,6	46,6	62,2	0	0
400	400	174	20	3	Nº IES						



3.5.5 Sociology

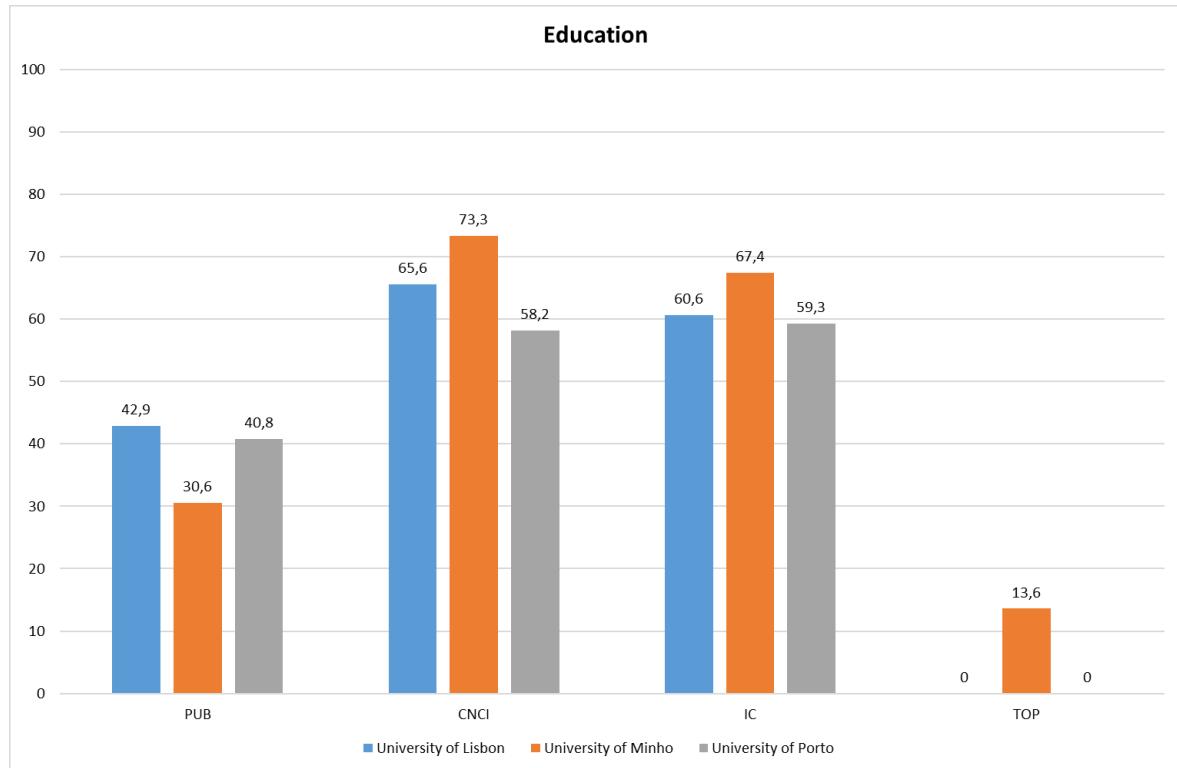
Como em 2018 e 2017, não há nenhuma IES portuguesa entre as 200 listadas (100, em 2017).

3.5.6 Education

Em 2017, não havia nenhuma IES portuguesa entre as 300 listadas.

World Rank19	World Rank18	Euro Rank	IbAm Rank	PT Rank	Institution	Total Score	PUB	CNCI	IC	TOP
301-400	201-300	91-125	6-14	1-3	University of Lisbon		42,9	65,6	60,6	0
301-400	301-400	91-125	6-14	1-3	University of Minho		30,6	73,3	67,4	13,6
301-400	301-400	91-125	6-14	1-3	University of Porto		40,8	58,2	59,3	0
n/c	401-500				University of Coimbra					
500	500	167	29	3	Nº IES					

n/c - não consta

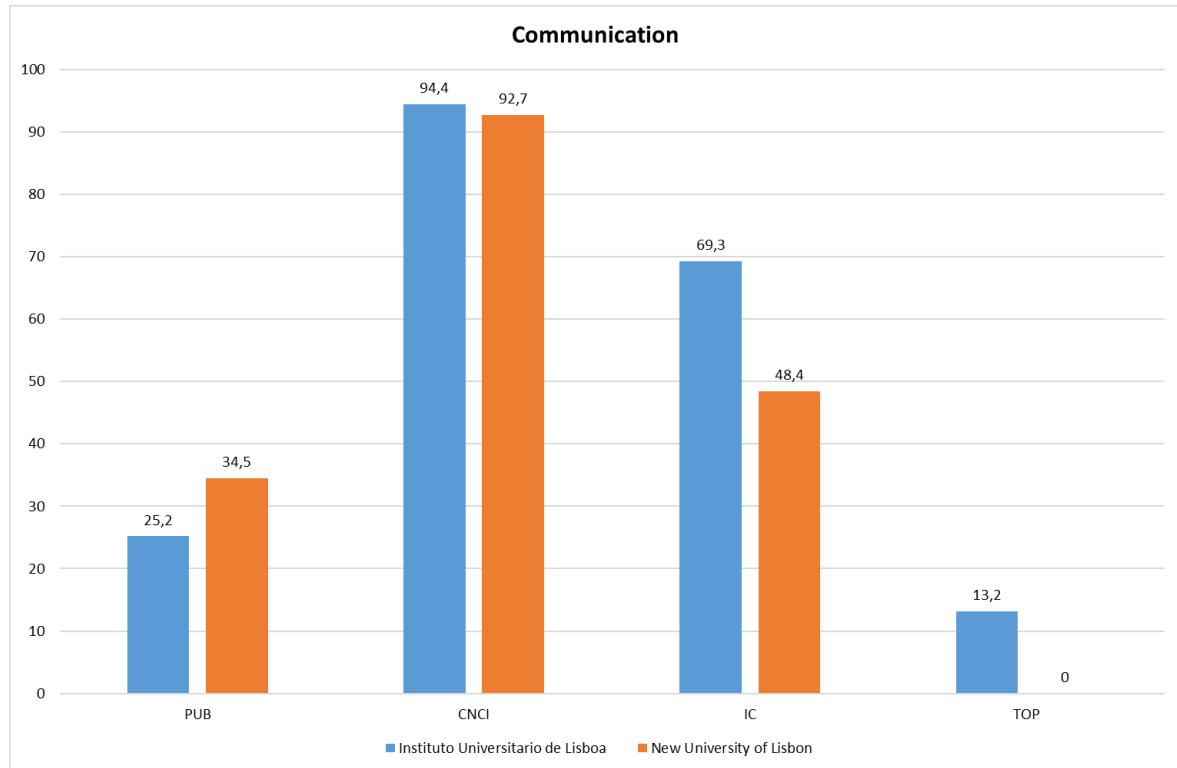


3.5.7 Communication

Em 2017, não havia nenhuma IES portuguesa entre as 100 listadas.

World Rank19	World Rank18	Euro Rank	IbAm Rank	PT Rank	Institution	Total Score	PUB	CNCI	IC	TOP
151-200	n/c	47-65	2-6	1-2	Instituto Universitario de Lisboa		25,2	94,4	69,3	13,2
151-200	201-300	47-65	2-6	1-2	New University of Lisbon		34,5	92,7	48,4	0
n/c	201-300				University of Lisbon					
300	300	109	16	2	Nº IES					

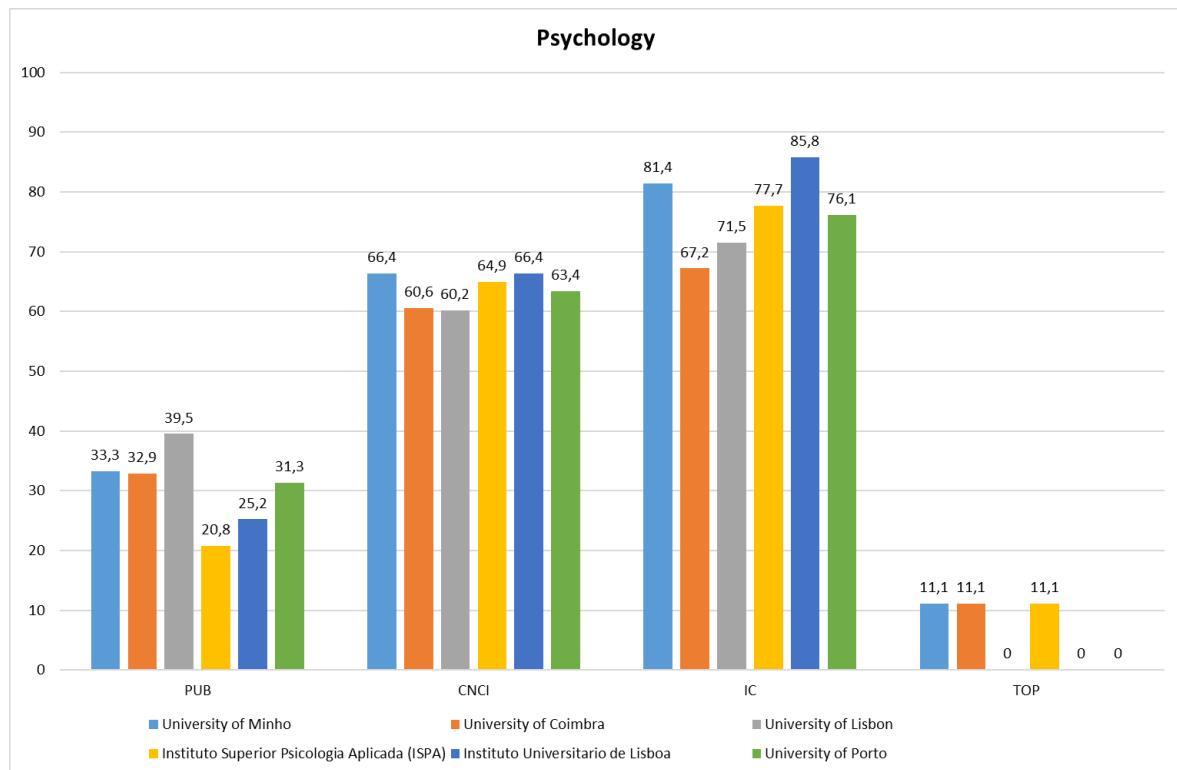
n/c - não consta



3.5.8 Psychology

World Rank19	World Rank18	World Rank17	Euro Rank	IbAm Rank	PT Rank	Institution	Total Score	PUB	CNCI	IC	TOP
201-300	201-300	201-300	76-120	5-6	1	University of Minho		33,3	66,4	81,4	11,1
301-400	301-400	n/c	121-67	7-13	2-3	University of Coimbra		32,9	60,6	67,2	11,1
301-400	301-400	201-300	121-67	7-13	2-3	University of Lisbon		39,5	60,2	71,5	0
401-500	401-500	n/c	168-214	14-19	4-6	Instituto Superior Psicologia Aplicada (ISPA)		20,8	64,9	77,7	11,1
401-500	301-400	201-300	168-214	14-19	4-6	Instituto Universitario de Lisboa		25,2	66,4	85,8	0
401-500	401-500	n/c	168-214	14-19	4-6	University of Porto		31,3	63,4	76,1	0
500	500	300	214	19	6	Nº IES					

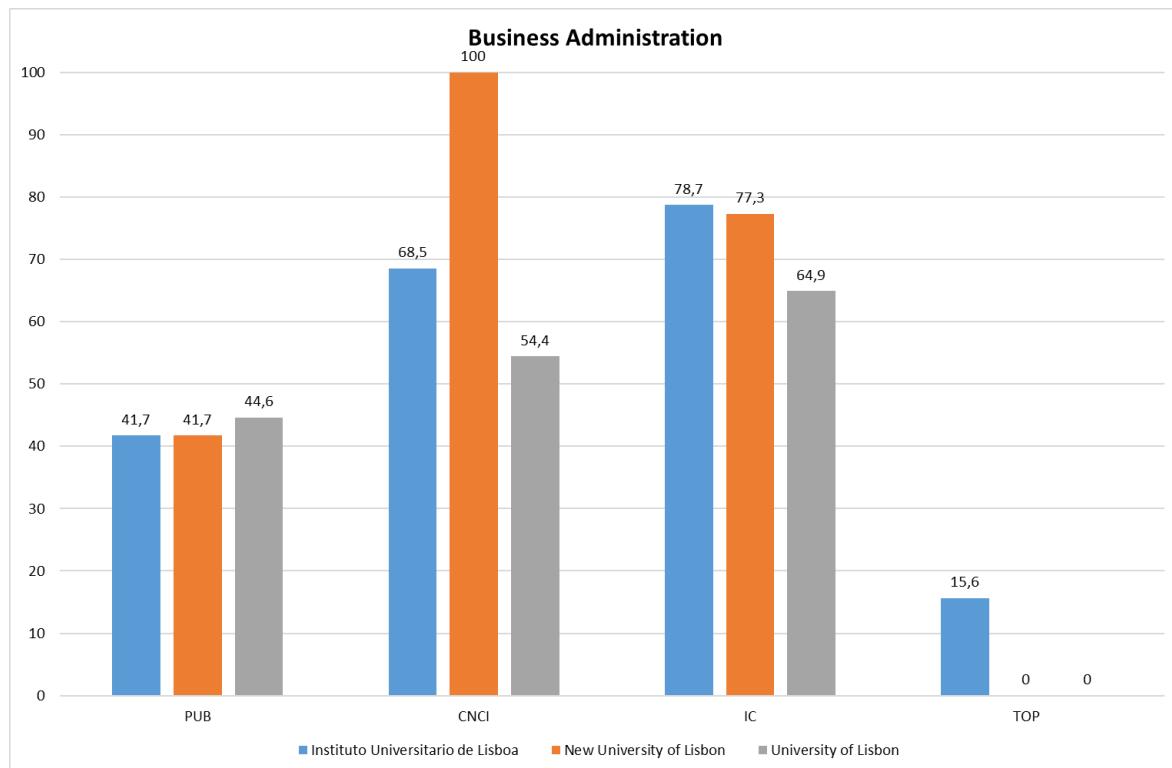
n/c - não consta



3.5.9 Business Administration

Em 2017, não havia nenhuma IES portuguesa entre as 200 listadas.

World Rank19	World Rank18	Euro Rank	IbAm Rank	PT Rank	Institution	Total Score	PUB	CNCI	IC	TOP
201-300	301-400	63-110	4-11	1-2	Instituto Universitario de Lisboa		41,7	68,5	78,7	15,6
201-300	201-300	63-110	4-11	1-2	New University of Lisbon		41,7	100	77,3	0
301-400	301-400	111-167	12-24	3	University of Lisbon		44,6	54,4	64,9	0
400	400	167	24	3	Nº IES					



3.5.10 Finance

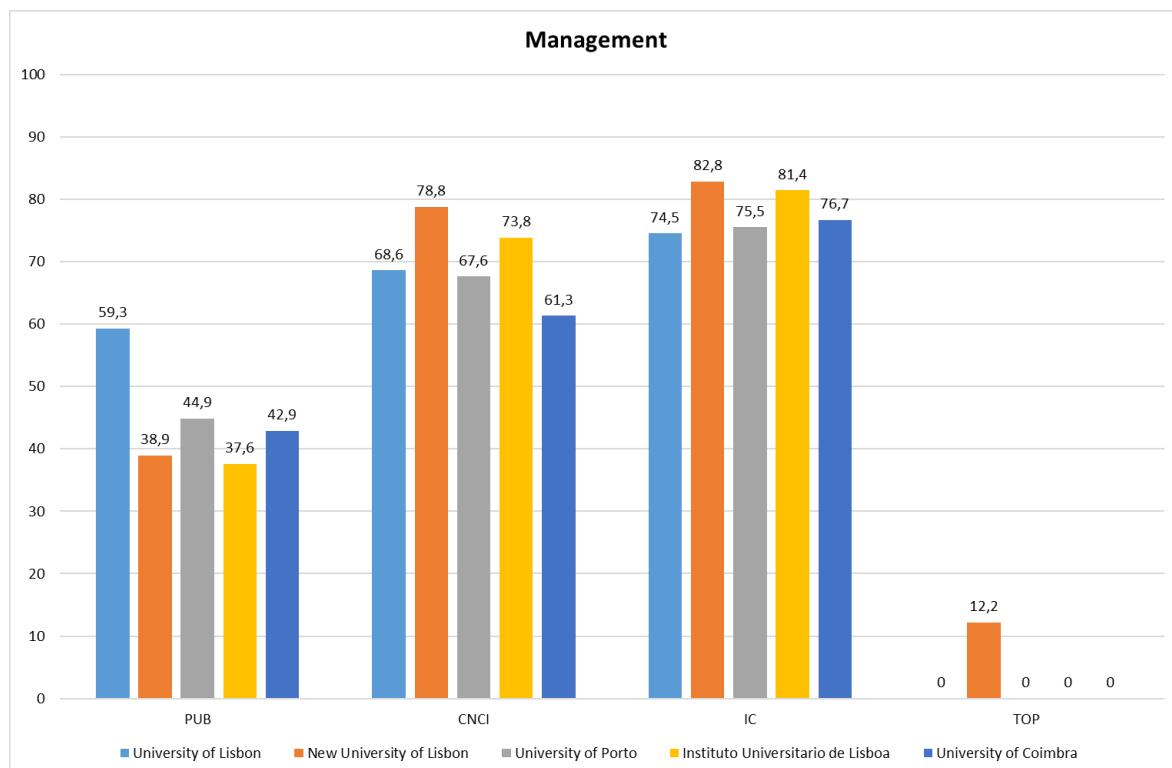
Em 2018 e 2017, não havia nenhuma IES portuguesa entre as 200 listadas.

World Rank19	Euro Rank	IbAm Rank	PT Rank	Institution	Total Score	PUB	CNCI	IC	TOP
76-100	18-25	1	1	New University of Lisbon		42	91,5	81,7	41,6
200	68	3	1	Nº IES					

3.5.11 Management

World Rank19	World Rank18	World Rank17	Euro Rank	IbAm Rank	PT Rank	Institution	Total Score	PUB	CNCI	IC	TOP
151-200	151-200	201-300	48-68	2-7	1	University of Lisbon		59,3	68,6	74,5	0
201-300	201-300	201-300	69-106	8-13	2	New University of Lisbon		38,9	78,8	82,8	12,2
301-400	301-400	301-400	107-146	14-21	3	University of Porto		44,9	67,6	75,5	0
401-500	401-500	n/c	147-195	22-31	4-5	Instituto Universitario de Lisboa		37,6	73,8	81,4	0
401-500	301-400	301-400	147-195	22-31	4-5	University of Coimbra		42,9	61,3	76,7	0
500	500	400	195	31	5	Nº IES					

n/c - não consta



3.5.12 Public Administration

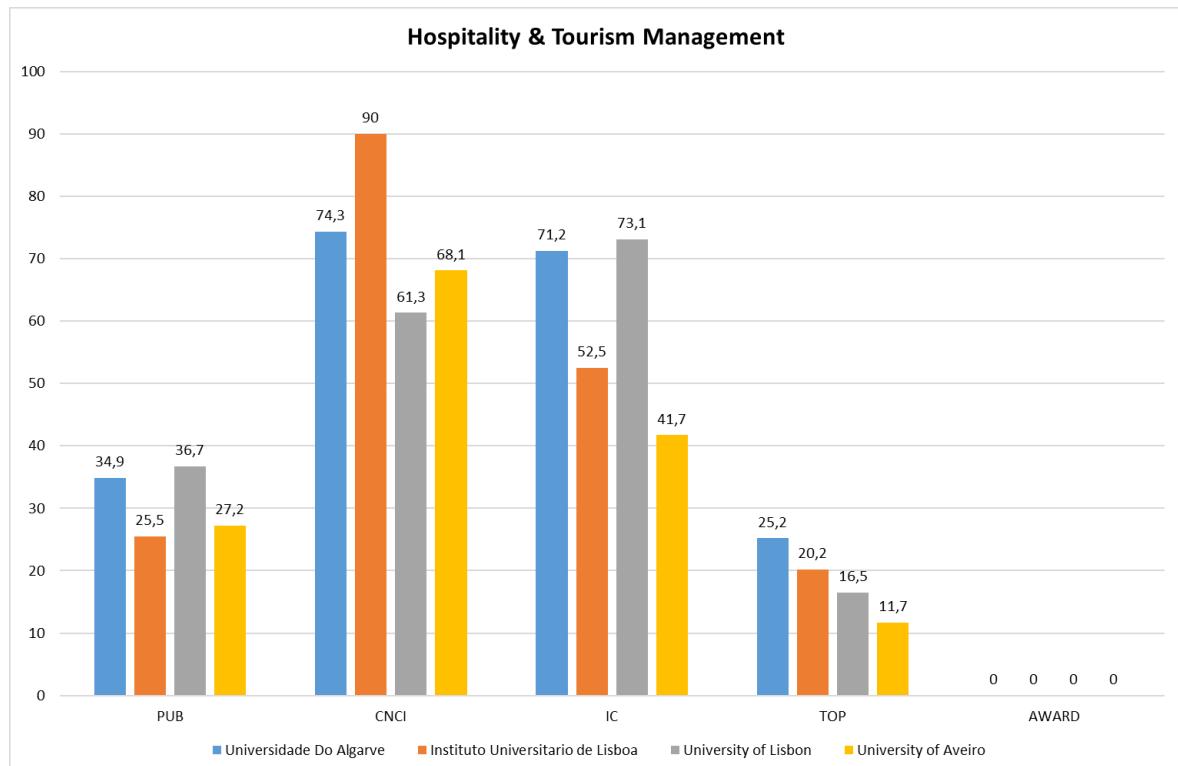
Em 2018 e 2017, não havia nenhuma IES portuguesa entre as 200 listadas (100, em 2017).

World Rank19	Euro Rank	IbAm Rank	PT Rank	Institution	Total Score	PUB	CNCI	IC	TOP
151-200	69-93	3-5	1	University of Lisbon		34,1	69,9	57,6	0
200	93	5	1	Nº IES					

3.5.13 Hospitality & Tourism Management

World Rank19	World Rank18	World Rank17	Euro Rank	IbAm Rank	PT Rank	Institution	Total Score	PUB	CNCI	IC	TOP	AWARD
51-75	101-150	n/c	10-18	3-4	1	Universidade do Algarve		34,9	74,3	71,2	25,2	0
101-150	n/c	n/c	31-55	7-12	2-3	Instituto Universitario de Lisboa		25,5	90	52,5	20,2	0
101-150	76-100	76-100	31-55	7-12	2-3	University of Lisbon		36,7	61,3	73,1	16,5	0
201-300	n/c	n/c	79-122	15-19	4	University of Aveiro		27,2	68,1	41,7	11,7	0
300	200	100	122	19	4	Nº IES		34,9	74,3	71,2	25,2	0

n/c - não consta



3.5.14 Library & Information Science

Como em 2017 e 2018, não há nenhuma IES portuguesa entre as 100 listadas.

3.6 RESUMO

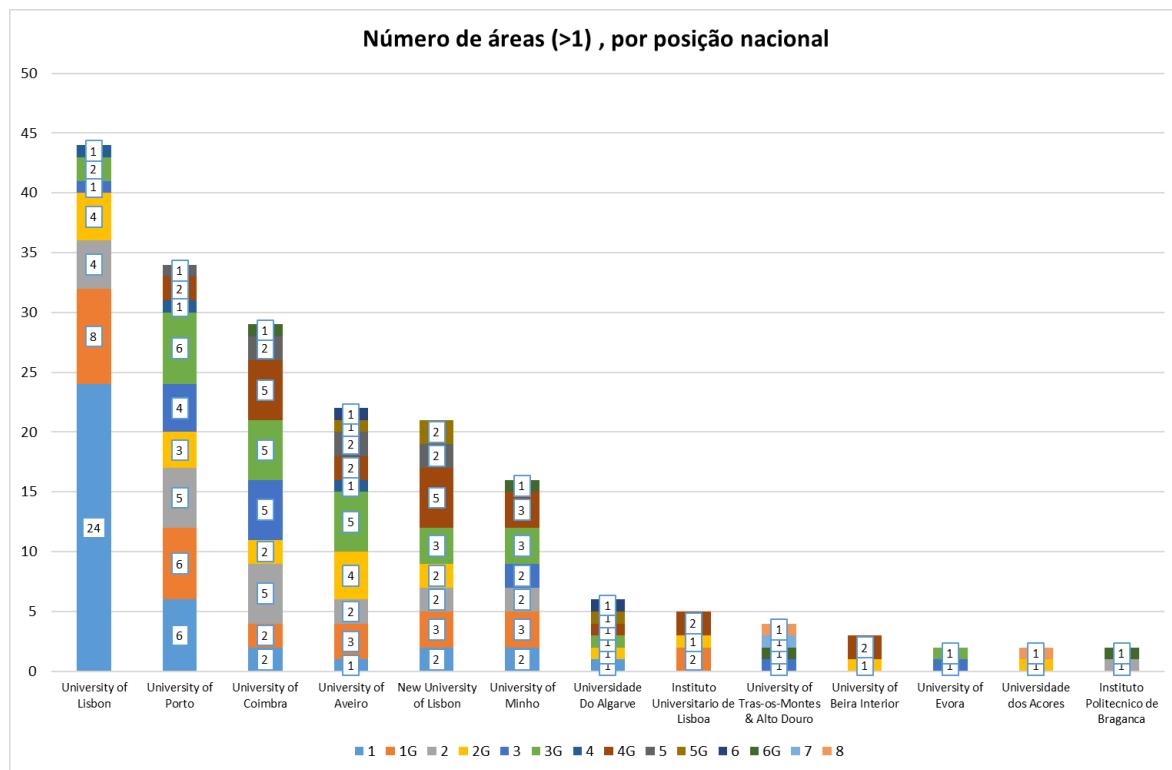
Apresenta-se em resumo as IES portuguesas presentes no ShanghaiRanking's Global Ranking of Academic Subjects 2019, indicando o número de áreas em que são listadas e a posição em que surgem a nível nacional.

	1	1G	2	2G	3	3G	4	4G	5	5G	6	6G	7	8	Total Áreas
University of Lisbon	24	8	4	4	1	2	1								44
University of Porto	6	6	5	3	4	6	1	2	1						34
University of Coimbra	2	2	5	2	5	5		5	2				1		29
University of Aveiro	1	3	2	4		5	1	2	2	1	1				22
New University of Lisbon	2	3	2	2		3		5	2	2					21
University of Minho	2	3	2		2	3		3				1			16
Universidade Do Algarve	1			1		1		1		1	1				6
Instituto Universitario de Lisboa		2		1				2							5
University of Tras-os-Montes & Alto Douro					1							1	1	1	4
University of Beira Interior				1				2							3
University of Evora					1	1									2
Universidade dos Acores				1									1		2
Instituto Politecnico de Braganca				1								1			2
Catholic University of Portugal												1			1
Instituto Superior Psicologia Aplicada (ISPA)								1							1

Legenda:

1, 2, ... - 1^a, 2^a, ... posição isolada

1G, 2G, ... 1^a, 2^a, ... posição em grupo



4. Anexos

4.1 Mapping between Web of Science categories and 54 academic subjects

“Mapping between Web of Science categories and 54 academic subjects

Academic Subjects	Web of Science Categories
Mathematics	MATHEMATICS
Mathematics	MATHEMATICS, APPLIED
Physics	ACOUSTICS
Physics	ASTRONOMY & ASTROPHYSICS
Physics	OPTICS
Physics	PHYSICS, APPLIED
Physics	PHYSICS, ATOMIC, MOLECULAR & CHEMICAL
Physics	PHYSICS, CONDENSED MATTER
Physics	PHYSICS, FLUIDS & PLASMAS
Physics	PHYSICS, MATHEMATICAL
Physics	PHYSICS, MULTIDISCIPLINARY
Physics	PHYSICS, NUCLEAR
Physics	PHYSICS, PARTICLES & FIELDS
Chemistry	CHEMISTRY, ANALYTICAL
Chemistry	CHEMISTRY, APPLIED
Chemistry	CHEMISTRY, INORGANIC & NUCLEAR
Chemistry	CHEMISTRY, MULTIDISCIPLINARY
Chemistry	CHEMISTRY, ORGANIC
Chemistry	CHEMISTRY, PHYSICAL
Chemistry	CRYSTALLOGRAPHY
Chemistry	ELECTROCHEMISTRY
Chemistry	SPECTROSCOPY
Chemistry	POLYMER SCIENCE
Earth Sciences	GEOCHEMISTRY & GEOPHYSICS
Earth Sciences	GEOLOGY
Earth Sciences	GEOSCIENCES, MULTIDISCIPLINARY
Earth Sciences	MINERALOGY
Earth Sciences	PALEONTOLOGY
Geography	AREA STUDIES
Geography	GEOGRAPHY
Geography	GEOGRAPHY, PHYSICAL
Ecology	BIODIVERSITY CONSERVATION
Ecology	ECOLOGY
Oceanography	OCEANOGRAPHY
Atmospheric Science	METEOROLOGY & ATMOSPHERIC SCIENCES
Mechanical Engineering	ENGINEERING, MANUFACTURING
Mechanical Engineering	ENGINEERING, MECHANICAL
Electrical & Electronic Engineering	ENGINEERING, ELECTRICAL & ELECTRONIC
Electrical & Electronic Engineering	IMAGING SCIENCE & PHOTOGRAPHIC TECHNOLOGY
Automation & Control	AUTOMATION & CONTROL SYSTEMS
Automation & Control	ROBOTICS
Telecommunication Engineering	TELECOMMUNICATIONS
Instruments Science & Technology	INSTRUMENTS & INSTRUMENTATION
Instruments Science & Technology	MICROSCOPY
Biomedical Engineering	CELL & TISSUE ENGINEERING
Biomedical Engineering	ENGINEERING, BIOMEDICAL
Computer Science & Engineering	COMPUTER SCIENCE, INFORMATION SYSTEMS

Academic Subjects	Web of Science Categories
Computer Science & Engineering	COMPUTER SCIENCE, CYBERNETICS
Computer Science & Engineering	COMPUTER SCIENCE, SOFTWARE ENGINEERING
Computer Science & Engineering	COMPUTER SCIENCE, ARTIFICIAL INTELLIGENCE
Computer Science & Engineering	COMPUTER SCIENCE, HARDWARE & ARCHITECTURE
Computer Science & Engineering	COMPUTER SCIENCE, THEORY & METHODS
Computer Science & Engineering	COMPUTER SCIENCE, INTERDISCIPLINARY APPLICATIONS
Civil Engineering	CONSTRUCTION & BUILDING TECHNOLOGY
Civil Engineering	ENGINEERING, CIVIL
Chemical Engineering	ENGINEERING, CHEMICAL
Materials Science & Engineering	MATERIALS SCIENCE, BIOMATERIALS
Materials Science & Engineering	MATERIALS SCIENCE, CERAMICS
Materials Science & Engineering	MATERIALS SCIENCE, CHARACTERIZATION & TESTING
Materials Science & Engineering	MATERIALS SCIENCE, COATINGS & FILMS
Materials Science & Engineering	MATERIALS SCIENCE, COMPOSITES
Materials Science & Engineering	MATERIALS SCIENCE, MULTIDISCIPLINARY
Materials Science & Engineering	MATERIALS SCIENCE, PAPER & WOOD
Materials Science & Engineering	MATERIALS SCIENCE, TEXTILES
Nanoscience and Nanotechnology	NANOSCIENCE & NANOTECHNOLOGY
Energy Science & Engineering	ENERGY & FUELS
Energy Science & Engineering	NUCLEAR SCIENCE & TECHNOLOGY
Energy Science & Engineering	ENGINEERING, PETROLEUM
Environmental Science & Engineering	ENGINEERING, ENVIRONMENTAL
Environmental Science & Engineering	ENVIRONMENTAL SCIENCES
Environmental Science & Engineering	ENVIRONMENTAL STUDIES
Water Resources	WATER RESOURCES
Food Science & Technology	FOOD SCIENCE & TECHNOLOGY
Biotechnology	BIOTECHNOLOGY & APPLIED MICROBIOLOGY
Aerospace Engineering	ENGINEERING, AEROSPACE
Marine/Ocean Engineering	ENGINEERING, MARINE
Marine/Ocean Engineering	ENGINEERING, OCEAN
Transportation Science & Technology	TRANSPORTATION
Transportation Science & Technology	TRANSPORTATION SCIENCE & TECHNOLOGY
Remote Sensing	REMOTE SENSING
Mining & Mineral Engineering	MINING & MINERAL PROCESSING
Metallurgical Engineering	METALLURGY & METALLURGICAL ENGINEERING
Biological Sciences	BIOCHEMICAL RESEARCH METHODS
Biological Sciences	BIOCHEMISTRY & MOLECULAR BIOLOGY
Biological Sciences	BIOLOGY
Biological Sciences	BIOPHYSICS
Biological Sciences	CELL BIOLOGY
Biological Sciences	DEVELOPMENTAL BIOLOGY
Biological Sciences	ENTOMOLOGY
Biological Sciences	EVOLUTIONARY BIOLOGY
Biological Sciences	GENETICS & HEREDITY
Biological Sciences	LIMNOLOGY
Biological Sciences	MARINE & FRESHWATER BIOLOGY
Biological Sciences	MATHEMATICAL & COMPUTATIONAL BIOLOGY
Biological Sciences	MICROBIOLOGY
Biological Sciences	MYCOLOGY
Biological Sciences	ORNITHOLOGY
Biological Sciences	PHYSIOLOGY
Biological Sciences	REPRODUCTIVE BIOLOGY

Academic Subjects	Web of Science Categories
Biological Sciences	VIROLOGY
Biological Sciences	ZOOLOGY
Human Biological Sciences	NEUROSCIENCES
Human Biological Sciences	ANATOMY & MORPHOLOGY
Human Biological Sciences	PARASITOLOGY
Human Biological Sciences	PATHOLOGY
Human Biological Sciences	IMMUNOLOGY
Human Biological Sciences	MEDICAL INFORMATICS
Human Biological Sciences	MEDICINE, RESEARCH & EXPERIMENTAL
Agricultural Sciences	AGRONOMY
Agricultural Sciences	HORTICULTURE
Agricultural Sciences	FISHERIES
Agricultural Sciences	SOIL SCIENCE
Agricultural Sciences	FORESTRY
Agricultural Sciences	AGRICULTURE, DAIRY & ANIMAL SCIENCE
Agricultural Sciences	AGRICULTURE, MULTIDISCIPLINARY
Agricultural Sciences	PLANT SCIENCES
Veterinary Sciences	VETERINARY SCIENCES
Clinical Medicine	ALLERGY
Clinical Medicine	ANDROLOGY
Clinical Medicine	ANESTHESIOLOGY
Clinical Medicine	CARDIAC & CARDIOVASCULAR SYSTEMS
Clinical Medicine	CLINICAL NEUROLOGY
Clinical Medicine	CRITICAL CARE MEDICINE
Clinical Medicine	DERMATOLOGY
Clinical Medicine	EMERGENCY MEDICINE
Clinical Medicine	ENDOCRINOLOGY & METABOLISM
Clinical Medicine	GASTROENTEROLOGY & HEPATOLOGY
Clinical Medicine	GERIATRICS & GERONTOLOGY
Clinical Medicine	GERONTOLOGY
Clinical Medicine	HEMATOLOGY
Clinical Medicine	INTEGRATIVE & COMPLEMENTARY MEDICINE
Clinical Medicine	MEDICINE, GENERAL & INTERNAL
Clinical Medicine	OBSTETRICS & GYNECOLOGY
Clinical Medicine	ONCOLOGY
Clinical Medicine	OPHTHALMOLOGY
Clinical Medicine	ORTHOPEDICS
Clinical Medicine	OTORHINOLARYNGOLOGY
Clinical Medicine	PEDIATRICS
Clinical Medicine	PERIPHERAL VASCULAR DISEASE
Clinical Medicine	PSYCHIATRY
Clinical Medicine	REHABILITATION
Clinical Medicine	RESPIRATORY SYSTEM
Clinical Medicine	RHEUMATOLOGY
Clinical Medicine	SURGERY
Clinical Medicine	TRANSPLANTATION
Clinical Medicine	TROPICAL MEDICINE
Clinical Medicine	UROLOGY & NEPHROLOGY
Clinical Medicine	AUDIOLOGY & SPEECH- LANGUAGE PATHOLOGY
Public Health	HEALTH POLICY & SERVICES
Public Health	HEALTH CARE SCIENCES & SERVICES
Public Health	INFECTIOUS DISEASES
Public Health	NUTRITION & DIETETICS
Public Health	PRIMARY HEALTH CARE
Public Health	PUBLIC, ENVIRONMENTAL & OCCUPATIONAL HEALTH
Public Health	SOCIAL SCIENCES, BIOMEDICAL

Academic Subjects	Web of Science Categories
Public Health	SUBSTANCE ABUSE
Public Health	ERGONOMICS
Dentistry & Oral Sciences	DENTISTRY, ORAL SURGERY & MEDICINE
Nursing	NURSING
Medical Technology	MEDICAL LABORATORY TECHNOLOGY
Medical Technology	NEUROIMAGING
Medical Technology	RADIOLOGY, NUCLEAR MEDICINE & MEDICAL IMAGING
Pharmacy & Pharmaceutical Sciences	CHEMISTRY, MEDICINAL
Pharmacy & Pharmaceutical Sciences	PHARMACOLOGY & PHARMACY
Pharmacy & Pharmaceutical Sciences	TOXICOLOGY
Economics	ECONOMICS
Statistics	STATISTICS & PROBABILITY
Law	CRIMINOLOGY & PENOLOGY
Law	LAW
Political Sciences	INTERNATIONAL RELATIONS
Political Sciences	POLITICAL SCIENCE
Sociology	SOCIOLOGY
Education	EDUCATION & EDUCATIONAL RESEARCH
Education	EDUCATION, SCIENTIFIC DISCIPLINES
Education	EDUCATION, SPECIAL
Communication	COMMUNICATION
Psychology	PSYCHOLOGY
Psychology	PSYCHOLOGY, APPLIED
Psychology	PSYCHOLOGY, BIOLOGICAL
Psychology	PSYCHOLOGY, CLINICAL
Psychology	PSYCHOLOGY, DEVELOPMENTAL
Psychology	PSYCHOLOGY, EDUCATIONAL
Psychology	PSYCHOLOGY, EXPERIMENTAL
Psychology	PSYCHOLOGY, MATHEMATICAL
Psychology	PSYCHOLOGY, MULTIDISCIPLINARY
Psychology	PSYCHOLOGY, PSYCHOANALYSIS
Psychology	PSYCHOLOGY, SOCIAL
Psychology	BEHAVIORAL SCIENCES
Business Administration	BUSINESS
Business Administration	INDUSTRIAL RELATIONS & LABOR
Finance	BUSINESS, FINANCE
Management	MANAGEMENT
Management	OPERATIONS RESEARCH & MANAGEMENT SCIENCE
Public Administration	PUBLIC ADMINISTRATION
Hospitality & Tourism Management	HOSPITALITY, LEISURE, SPORT & TOURISM
Library & Information Science	INFORMATION SCIENCE & LIBRARY SCIENCE

³ 3

³ In http://www.shanghairanking.com/Shanghairanking-Subject-Rankings/attachment/Mapping_between_Web_of_Science_categories_and_54_academic_subjects.pdf, acedido 26 de junho de 2019.

4.2 ShanghaiRanking Academic Excellence Survey 2019 Top Journals & Conferences

"

Academic Subject	Journal Name	ISSN	Percentage Voted
Mathematics	ANNALS OF MATHEMATICS	0003-486X	73%
Mathematics	JOURNAL OF THE AMERICAN MATHEMATICAL SOCIETY	0894-0347	67%
Mathematics	INVENTIONES MATHEMATICAE	0020-9910	53%
Physics	PHYSICAL REVIEW LETTERS	0031-9007	86%
Chemistry	ANGEWANDTE CHEMIE-INTERNATIONAL EDITION	1433-7851	83%
Chemistry	JOURNAL OF THE AMERICAN CHEMICAL SOCIETY	0002-7863	78%
Chemistry	NATURE CHEMISTRY	1755-4330	61%
Chemistry	NATURE MATERIALS	1476-1122	44%
Earth Sciences	EARTH AND PLANETARY SCIENCE LETTERS	0012-821X	67%
Earth Sciences	GEOPHYSICAL RESEARCH LETTERS	0094-8276	61%
Earth Sciences	NATURE GEOSCIENCE	1752-0894	61%
Earth Sciences	GEOCHIMICA ET COSMOCHIMICA ACTA	0016-7037	50%
Geography	URBAN GEOGRAPHY	0272-3638	67%
Geography	PROGRESS IN HUMAN GEOGRAPHY	0309-1325	67%
Geography	ANNALS OF THE ASSOCIATION OF AMERICAN GEOGRAPHERS	0004-5608	67%
Ecology	TRENDS IN ECOLOGY & EVOLUTION	0169-5347	100%
Ecology	ECOLOGY LETTERS	1461-023X	100%
Ecology	ANNUAL REVIEW OF ECOLOGY EVOLUTION AND SYSTEMATICS	1543-592X	75%
Atmospheric Science	NATURE CLIMATE CHANGE	1758-678X	67%
Atmospheric Science	ATMOSPHERIC CHEMISTRY AND PHYSICS	1680-7316	67%
Mechanical Engineering	JOURNAL OF FLUID MECHANICS	0022-1120	41%
Mechanical Engineering	JOURNAL OF THE MECHANICS AND PHYSICS OF SOLIDS	0022-5096	23%
Mechanical Engineering	JOURNAL OF SOUND AND VIBRATION	0022-460X	23%
Mechanical Engineering	IEEE-ASME TRANSACTIONS ON MECHATRONICS	1083-4435	18%
Mechanical Engineering	COMBUSTION AND FLAME	0010-2180	18%
Mechanical Engineering	INTERNATIONAL JOURNAL OF HEAT AND MASS TRANSFER	0017-9310	18%
Mechanical Engineering	PROCEEDINGS OF THE COMBUSTION INSTITUTE	1540-7489	14%
Mechanical Engineering	JOURNAL OF ENGINEERING FOR GAS TURBINES AND POWER	0742-4795	14%
Mechanical Engineering	JOURNAL OF TURBOMACHINERY-TRANSACTIONS OF THE ASME	0889-504X	14%
Electrical & Electronic Engineering	PROCEEDINGS OF THE IEEE	0018-9219	58%
Automation & Control	AUTOMATICA	0005-1098	90%
Automation & Control	IEEE TRANSACTIONS ON AUTOMATIC CONTROL	0018-9286	80%
Automation & Control	SIAM JOURNAL ON CONTROL AND OPTIMIZATION	0363-0129	60%
Automation & Control	INTERNATIONAL JOURNAL OF ROBOTICS RESEARCH	0278-3649	50%
Automation & Control	IEEE TRANSACTIONS ON ROBOTICS	1552-3098	50%
Biomedical Engineering	Biomaterials	0142-9612	45%
Civil Engineering	JOURNAL OF STRUCTURAL ENGINEERING	0733-9445	58%
Chemical Engineering	INDUSTRIAL & ENGINEERING CHEMISTRY RESEARCH	0888-5885	57%
Chemical Engineering	ENERGY & ENVIRONMENTAL SCIENCE	1754-5692	52%

Academic Subject	Journal Name	ISSN	Percentage Voted
Materials Science & Engineering	NATURE MATERIALS	1476-1122	63%
Materials Science & Engineering	ADVANCED MATERIALS	0935-9648	53%
Nanoscience & Nanotechnology	ADVANCED FUNCTIONAL MATERIALS	1616-301X	100%
Nanoscience & Nanotechnology	ACS Nano	1936-0851	100%
Nanoscience & Nanotechnology	ADVANCED MATERIALS	0935-9648	100%
Nanoscience & Nanotechnology	NANO LETTERS	1530-6984	100%
Nanoscience & Nanotechnology	Nature Nanotechnology	1748-3387	100%
Nanoscience & Nanotechnology	Nano Today	1748-0132	67%
Nanoscience & Nanotechnology	Small	1613-6810	67%
Energy Science & Engineering	ENERGY & ENVIRONMENTAL SCIENCE	1754-5692	67%
Energy Science & Engineering	ADVANCED ENERGY MATERIALS	1614-6832	67%
Environmental Science & Engineering	ENVIRONMENTAL SCIENCE & TECHNOLOGY	0013-936X	100%
Water Resources	JOURNAL OF HYDROLOGY	0022-1694	100%
Water Resources	WATER RESOURCES RESEARCH	0043-1397	100%
Aerospace Engineering	JOURNAL OF SPACECRAFT AND ROCKETS	0022-4650	100%
Aerospace Engineering	AIAA JOURNAL	0001-1452	80%
Aerospace Engineering	JOURNAL OF PROPULSION AND POWER	0748-4658	60%
Marine/Ocean Engineering	APPLIED OCEAN RESEARCH	0141-1187	100%
Remote Sensing	IEEE TRANSACTIONS ON GEOSCIENCE AND REMOTE SENSING	0196-2892	100%
Remote Sensing	REMOTE SENSING OF ENVIRONMENT	0034-4257	100%
Remote Sensing	ISPRS JOURNAL OF PHOTOGRAMMETRY AND REMOTE SENSING	0924-2716	67%
Metallurgical Engineering	ACTA MATERIALIA	1359-6454	83%
Metallurgical Engineering	SCRIPTA MATERIALIA	1359-6462	50%
Metallurgical Engineering	CORROSION SCIENCE	0010-938X	50%
Metallurgical Engineering	METALLURGICAL AND MATERIALS TRANSACTIONS A-PHYSICAL METALLURGY AND MATERIALS SCIENCE	1073-5623	50%
Biological Sciences	CELL	0092-8674	60%
Veterinary Sciences	VETERINARY RESEARCH	0928-4249	78%
Veterinary Sciences	VETERINARY MICROBIOLOGY	0378-1135	67%
Clinical Medicine	NEW ENGLAND JOURNAL OF MEDICINE	0028-4793	91%
Clinical Medicine	LANCET	0140-6736	73%
Public Health	ENVIRONMENTAL HEALTH PERSPECTIVES	0091-6765	57%
Public Health	INTERNATIONAL JOURNAL OF EPIDEMIOLOGY	0300-5771	57%
Public Health	ANNUAL REVIEW OF PUBLIC HEALTH	0163-7525	43%
Dentistry & Oral Sciences	JOURNAL OF DENTAL RESEARCH	0022-0345	100%
Nursing	INTERNATIONAL JOURNAL OF NURSING STUDIES	0020-7489	86%
Nursing	RESEARCH IN NURSING & HEALTH	0160-6891	57%
Pharmacy & Pharmaceutical Sciences	NATURE REVIEWS DRUG DISCOVERY	1474-1776	63%
Economics	ECONOMETRICA	0012-9682	95%
Economics	AMERICAN ECONOMIC REVIEW	0002-8282	86%
Economics	JOURNAL OF POLITICAL ECONOMY	0022-3808	81%
Economics	QUARTERLY JOURNAL OF ECONOMICS	0033-5533	76%
Economics	REVIEW OF ECONOMIC STUDIES	0034-6527	76%
Statistics	ANNALS OF STATISTICS	0090-5364	93%
Statistics	JOURNAL OF THE AMERICAN STATISTICAL ASSOCIATION	0162-1459	93%

Academic Subject	Journal Name	ISSN	Percentage Voted
Statistics	JOURNAL OF THE ROYAL STATISTICAL SOCIETY SERIES B-STATISTICAL METHODOLOGY	1369-7412	64%
Statistics	BIOMETRIKA	0006-3444	57%
Law	HARVARD LAW REVIEW	0017-811X	86%
Law	YALE LAW JOURNAL	0044-0094	71%
Political Sciences	AMERICAN POLITICAL SCIENCE REVIEW	0003-0554	100%
Political Sciences	INTERNATIONAL ORGANIZATION	0020-8183	50%
Political Sciences	WORLD POLITICS	0043-8871	50%
Political Sciences	AMERICAN JOURNAL OF POLITICAL SCIENCE	0092-5853	50%
Sociology	AMERICAN JOURNAL OF SOCIOLOGY	0002-9602	100%
Sociology	AMERICAN SOCIOLOGICAL REVIEW	0003-1224	100%
Education	AMERICAN EDUCATIONAL RESEARCH JOURNAL	0002-8312	75%
Education	EDUCATIONAL RESEARCHER	0013-189X	63%
Education	REVIEW OF EDUCATIONAL RESEARCH	0034-6543	63%
Education	JOURNAL OF RESEARCH IN SCIENCE TEACHING	0022-4308	50%
Education	JOURNAL OF TEACHER EDUCATION	0022-4871	50%
Education	TEACHING AND TEACHER EDUCATION	0742-051X	50%
Communication	JOURNAL OF COMMUNICATION	0021-9916	100%
Communication	COMMUNICATION RESEARCH	0093-6502	86%
Communication	HUMAN COMMUNICATION RESEARCH	0360-3989	86%
Communication	COMMUNICATION THEORY	1050-3293	57%
Psychology	PSYCHOLOGICAL SCIENCE	0956-7976	91%
Psychology	PSYCHOLOGICAL REVIEW	0033-295X	64%
Psychology	PSYCHOLOGICAL BULLETIN	0033-2909	64%
Psychology	TRENDS IN COGNITIVE SCIENCES	1364-6613	45%
Business Administration	JOURNAL OF CONSUMER RESEARCH	0093-5301	57%
Business Administration	JOURNAL OF MARKETING RESEARCH	0022-2437	43%
Business Administration	JOURNAL OF MARKETING	0022-2429	43%
Finance	JOURNAL OF FINANCIAL ECONOMICS	0304-405X	100%
Finance	JOURNAL OF FINANCE	0022-1082	100%
Finance	REVIEW OF FINANCIAL STUDIES	0893-9454	100%
Management	ACADEMY OF MANAGEMENT JOURNAL	0001-4273	73%
Management	MANAGEMENT SCIENCE	0025-1909	67%
Management	ACADEMY OF MANAGEMENT REVIEW	0363-7425	67%
Management	ORGANIZATION SCIENCE	1047-7039	67%
Management	STRATEGIC MANAGEMENT JOURNAL	0143-2095	67%
Management	ADMINISTRATIVE SCIENCE QUARTERLY	0001-8392	47%
Public Administration	PUBLIC ADMINISTRATION REVIEW	0033-3352	100%
Hospitality & Tourism Management	ANNALS OF TOURISM RESEARCH	0160-7383	86%
Hospitality & Tourism Management	INTERNATIONAL JOURNAL OF HOSPITALITY MANAGEMENT	0278-4319	71%
Hospitality & Tourism Management	INTERNATIONAL JOURNAL OF CONTEMPORARY HOSPITALITY MANAGEMENT	0959-6119	71%
Hospitality & Tourism Management	TOURISM MANAGEMENT	0261-5177	71%
Hospitality & Tourism Management	JOURNAL OF TRAVEL RESEARCH	0047-2875	57%
Hospitality & Tourism Management	JOURNAL OF HOSPITALITY & TOURISM RESEARCH	1096-3480	43%
Agricultural Economics	AMERICAN JOURNAL OF AGRICULTURAL ECONOMICS	0002-9092	100%
Agricultural Economics	EUROPEAN REVIEW OF AGRICULTURAL ECONOMICS	0165-1587	75%

Academic Subject	Journal Name	ISSN	Percentage Voted
Agricultural Economics	JOURNAL OF ENVIRONMENTAL ECONOMICS AND MANAGEMENT	0095-0696	75%
Agricultural Economics	LAND ECONOMICS	0023-7639	50%
Agricultural Economics	AGRICULTURAL ECONOMICS	0169-5150	50%
Library & Information Science	JOURNAL OF THE AMERICAN MEDICAL INFORMATICS ASSOCIATION	1067-5027	100%
Library & Information Science	MIS QUARTERLY	0276-7783	100%
Library & Information Science	JOURNAL OF THE AMERICAN SOCIETY FOR INFORMATION SCIENCE AND TECHNOLOGY	1532-2882	100%
Sports Science	JOURNAL OF APPLIED PHYSIOLOGY	8750-7587	67%
Sports Science	MEDICINE AND SCIENCE IN SPORTS AND EXERCISE	0195-9131	67%
Sports Science	JOURNAL OF SPORTS SCIENCES	0264-0414	67%

^{“4}

“

Academic Subject	Conference Name	Conference Abbreviation	Percentage Voted
Computer Science & Engineering	Annual Conference on Neural Information Processing Systems	NIPS	15%
Computer Science & Engineering	ACM SIGGRAPH	SIGGRAPH	15%
Computer Science & Engineering	USENIX Symposium on Operating Systems Design and Implementation	OSDI	12%
Computer Science & Engineering	ACM Symposium on the Theory of Computing	STOC	12%
Computer Science & Engineering	International Conference on Computer Aided Verification	CAV	12%
Computer Science & Engineering	Symposium on Principles of Programming Languages	POPL	12%
Computer Science & Engineering	International Conference on Computational Learning Theory	COLT	12%
Computer Science & Engineering	Conference on Computer Vision and Pattern Recognition	CVPR	8%
Computer Science & Engineering	International Cryptology Conference	CRYPTO	8%
Computer Science & Engineering	ACM SIGCOMM Conference	SIGCOMM	8%
Computer Science & Engineering	ACM Conference on Human Factors in Computing Systems	CHI	8%
Computer Science & Engineering	IEEE Symposium on Foundations of Computer Science	FOCS	8%
Computer Science & Engineering	ACM SIGGRAPH Asia	SIGGRAPH Asia	8%
Computer Science & Engineering	Theory of Cryptography Conference	TCC	8%
Computer Science & Engineering	European Symposium on Programming	ESOP	8%
Computer Science & Engineering	International Conference on Architectural Support for Programming Languages and Operating Systems	ASPLOS	8%
Computer Science & Engineering	International Conference on Machine Learning	ICML	8%

^{“5}

⁴ In <http://www.shanghairanking.com/subject-survey/top-journals.html>, acedido 27 de junho de 2019.

⁵ In <http://www.shanghairanking.com/subject-survey/conferences.html>, acedido 27 de junho de 2019.

4.3 ShanghaiRanking Academic Excellence Survey 2019 Top Award

“

Academic Subject	Award	Percentage Voted
Mathematics	Fields Medal	100%
Mathematics	The Abel Prize	87%
Physics	Nobel Prize in Physics	100%
Chemistry	Nobel Prize in Chemistry	100%
Chemistry	Wolf Prize in Chemistry	61%
Chemistry	Priestley Medal	50%
Earth Sciences	Crafoord Prize in Geosciences	50%
Mechanical Engineering	ASME Medal	41%
Mechanical Engineering	Timoshenko Medal	36%
Electrical & Electronic Engineering	IEEE Medal of Honor	92%
Automation & Control	IEEE Control Systems Award	40%
Computer Science & Engineering	A. M. Turing Award	85%
Civil Engineering	International Award of Merit in Structural Engineering	33%
Chemical Engineering	Andreas Acrivos Award for Professional Progress in Chemical Engineering	39%
Materials Science & Engineering	MRS Medal Award	58%
Materials Science & Engineering	Von Hippel Award	58%
Environmental Science & Engineering	Stockholm Water Prize	54%
Water Resources	ROBERT E. HORTON MEDAL	100%
Biological Sciences	Nobel Prize in Physiology or Medicine	40%
Human Biological Sciences	Nobel Prize in Physiology or Medicine	100%
Clinical Medicine	Nobel Prize in Physiology or Medicine	91%
Clinical Medicine	Lasker-DeBakey Clinical Medical Research Award	45%
Dentistry & Oral Sciences	IADR Distinguished Scientist Award	57%
Nursing	Nurse Researcher Hall of Fame	43%
Pharmacy & Pharmaceutical Sciences	Nobel Prize in Physiology or Medicine	38%
Economics	The Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel	86%
Statistics	COPSS Presidents' Award	57%
Political Sciences	The Johan Skytte Prize in Political Science	67%
Hospitality & Tourism Management	Ulysses Prize	43%

“6

⁶ In <http://www.shanghairanking.com/subject-survey/awards.html>, acedido 27 de junho de 2019.