

FACT FILE

Extended Version

Version 1.0

UNIVERSITAT POLITÈCNICA DE

SPAIN

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WELCOME TO THE 2019 QS WORLD UNIVERSITY RANKINGS BY SUBJECT

Welcome to your institution's fact file for the QS World University Rankings by Subject 2019.

This file provides the scores for your institution in the subjects that you have been evaluated in, as well as the scores and ranks for those subjects where you made it into the published rankings table. It should also provide you with useful information for any media communication you might need to prepare prior to launch.

To produce the rankings for this year the team analysed over 22 million papers, producing close to 200 million citations. 1,222 institutions have been ranked across 48 subjects in 5 subject areas, creating 15,000 published entries. These figures reflect some of the scale behind this huge undertaking that the team carries out in order to produce these subject rankings.

The first section contains an "at a glance" summary of your institution's performance across the board in all the subject areas covered. The wheel chart is a graphical representation – brightly coloured bars indicate that you have achieved a score in that subject; the longer the bar the higher the score you have attained. A pale bar in a subject area indicates your performance in the broad subject area.

The next table shows a summary of your scores and ranks in all the subjects you have been ranked in including a column which also shows your domestic rank in that subject. The following table then shows you your results in the subject rankings for the last three years so you can track your progress (please note, the subjects of Classics and Library Management were not featured in 2017).

In the Appendix you will find an explanation of the weightings that make up the different subject tables, the evolution of the subject rankings exercise, the paper thresholds that we have used in this edition and an indication of the number of institutions considered and ranked.

In this edition we have been able to increase the employer reputation component for three of our subject rankings where employer reputation is particularly key to that discipline. These are Hospitality, Performing Arts and Engineering – Mining.



The following sections focus on one broad subject area at a time, where it is relevant to your institution's performance. Specific subjects are grouped and displayed under the relevant broad subject area. Each section follows this format: a summary page of your performance, with ranks and scores. Then scatter plots highlighting your institution's performance on the reputational and research related indicators, as compared to other institutions globally. Next we dive in to each reputational score (academic, then employer) compared to the global mean. Finally, the section ends with a study of h-index and citations per paper.

Selina Griffin

Rankings Manager, QS



RANKINGS BY SUBJECT SUMMIT 2019



26th February



Australian National University Canberra, Australia

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UNIVERSITAT POLITÈCNICA DE CATALUNYA

AT A GLANCE

RANKED IN 4 BROAD SUBJECT AREAS

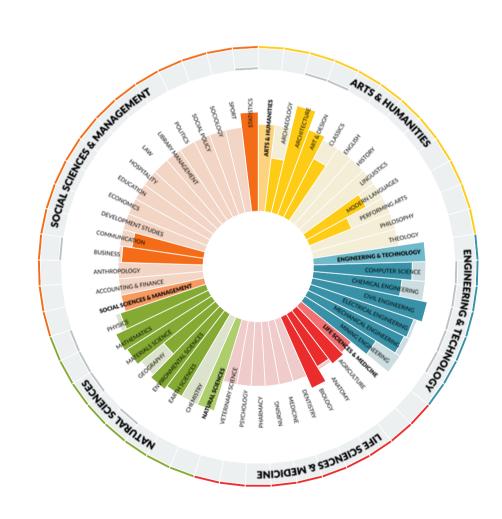
SCORED IN 24 SUBJECTS

RANKED IN 13 SUBJECTS

TOP 100 FOR 1 BROAD SUBJECT AREA

TOP 100 FOR 5 SUBJECTS

TOP 50 FOR 2 SUBJECTS



Lightly shaded areas indicate performance in the corresponding broad subject area.

Arts & Humanities

Natural Sciences

Engineering & Technology

Life Sciences & Medicine

Social Sciences & Management

Arts & Humanities

Social Sciences & Management

UNIVERSITAT POLITÈCNICA DE CATALUNYA

Spain

85= 345= 279= 394 These are the ranks achieved by the institution **Engineering &** Life Sciences & **Natural Sciences Social Sciences &** Arts & in the QS Rankings by Broad Subject Area. **Humanities** Technology Medicine Management **OVERALL SCORES BY SUBJECT AREA** In 2019, Universitat Politècnica de Engineering & Technology 79.5 Catalunya has been ranked in 4 out of 5 broad subject areas. 67.6 Natural Sciences **Engineering & Technology** is the

61.5

60.1

institution's strongest field at 85= and

an overall score of 79.5.

Below is the institution's detailed performance by indicator and overall score across the 48 subjects currently featured in the QS World University Rankings by Subject. It is very unusual for an institution to qualify for consideration in all 48 subjects.

		Global Rank	Domestic Rank	Academic	Employer	Citations	H-index	Score
	Arts & Humanities	345=	12	62.4	67.0	72.9	33.7	61.5
	Archaeology			35.2	64.8	45.9	24.5	38.2
	Architecture / Built Environment	29	1	76.3	79.1	83.6	82.4	77.9
S	Art & Design	51-100	1	63.8	66.9			64.1
niți.	Classics & Ancient History			45.9	54.3			46.7
Arts & Humanities	English Language & Literature							
로	History							
ts	Linguistics							
Ā	Modern Languages			41.7	63.3			48.2
	Performing Arts			27.6	50.9			32.3
	Philosophy							
	Theology, Divinity & Religious Studies							
	Engineering & Technology	85=	1	83.5	68.9	83.9	85.3	79.5
ە ن	Computer Science & Information Systems	101-150	1	61.6	67.0	83.1	84.9	69.9
ing logy	Engineering - Chemical	201-250	6	49.8	73.4	75.5	65.1	63.0
nno	Engineering - Civil & Structural	23	1	84.3	78.9	85.6	86.0	83.1
Engineering & Technology	Engineering - Electrical & Electronic	51-100	1	72.7	71.7	90.3	86.5	77.1
₫ .	Engineering - Mechanical, Aeronautical & Manufac	51-100	2	70.4	80.0	80.5	74.4	75.4
	Engineering - Mineral & Mining			32.3	74.3	86.0	76.2	59.5
ø	Life Sciences & Medicine			58.0	61.8	39.8	25.4	45.7
ici	Agriculture & Forestry			33.2	58.4	66.6	58.7	47.5
Med	Anatomy & Physiology			37.9	57.9	38.9	49.6	43.1
~ ~	Biological Sciences			46.7	61.5	59.8	60.7	55.0
JCei	Dentistry							
Life Sciences & Medicine	Medicine							
fe s	Pharmacy & Pharmacology							
5	Psychology							

		Global Rank	Domestic Rank	Academic	Employer	Citations	H-index	Score
	Chemistry							
S)	Earth & Marine Sciences			52.2	72.3	79.7	77.6	67.4
ince	Environmental Sciences	151-200	5	55.4	74.9	86.9	74.8	70.1
Scie	Geography			39.3	68.0	59.6	52.1	47.1
<u>ra</u>	Materials Science	151-200	2	67.5	71.3	81.1	65.0	70.7
Natural Sciences	Mathematics	101-150	1	66.4	67.2	84.8	77.9	72.5
Z	Natural Sciences	279=	8	63.5	69.6	77.6	63.6	67.6
	Physics & Astronomy	301-350	8	55.0	67.2	79.8	63.2	64.0
	Accounting & Finance							
	Anthropology							
	Business & Management Studies	301-350	11	44.6	62.7	85.3	80.3	57.7
<u> </u>	Communication & Media Studies			42.1	69.0	67.8	48.8	51.3
mer	Development Studies							
98	Economics & Econometrics							
ang	Education							
≥ ⊗	Hospitality & Leisure Management							
Ces	Law							
ie	Library & Information Management							
Social Sciences & Management	Politics & International Studies							
ocia	Social Policy & Administration							
V)	Social Sciences & Management	394	10	52.6	65.6	81.2	60.4	60.1
	Sociology							
	Sports-related Subjects							
	Statistics & Operational Research	101-150	3	63.3	64.3	80.0	80.2	70.1

NOTES:

There are different reasons why an institution may not have results in any given subject.

- 1. It may not offer a program
- 2. It may not have published a sufficient number of papers
- 3. It may not have attracted a minimum level of recognition through our surveys.
- 4. Receiving a score for a particular subject does not guarantee that we have checked for its presence in your institution. These checks are only carried out for institutions with a score high enough to receive a published rank in the subject.

The tables below present the rank evolution in each evaluated subject.

		2017	2018	2019
	Arts & Humanities	384=	298=	345=
	Art & Design	101-150	51-100	51-100
	History			
S S	Archaeology			
Arts & Humanities	Architecture / Built Environment	26	22	29
<u>m</u> a	Classics & Ancient History			
¥ 3	English Language & Literature			
is &	Linguistics			
Ā	Modern Languages			
	Performing Arts			
	Philosophy			
	Theology, Divinity & Religious Studies			
	Engineering & Technology	84	81=	85=
∞ _	Computer Science & Information Systems	101-150	51-100	101-150
Engineering & Technology	Engineering - Chemical	201-250	201-250	201-250
leer Juol	Engineering - Civil & Structural	34	34=	23
ngin Tecl	Engineering - Mechanical, Aeronautical & Manufact	101-150	101-150	51-100
Ψ.	Engineering - Electrical & Electronic	51-100	51-100	51-100
	Engineering - Mineral & Mining			
	Life Sciences & Medicine			
ine	Agriculture & Forestry	201-250	201-250	
edio	Anatomy & Physiology			
Ž	Biological Sciences			
es s	Medicine			
Life Sciences & Medicine	Pharmacy & Pharmacology			
Sci	Psychology			
Life	Dentistry			
	Nursing			

		2017	2018	2019
	Natural Sciences	299=	271=	279=
	Chemistry			
Natural Sciences	Earth & Marine Sciences			
Scie	Environmental Sciences	201-250	151-200	151-200
ural	Geography			
Nati	Materials Science	151-200	151-200	151-200
	Mathematics	51-100	51-100	101-150
	Physics & Astronomy	251-300	201-250	301-350
	Social Sciences & Management	363=	298	394
	Accounting & Finance			
	Anthropology			
	Business & Management Studies	251-300	251-300	301-350
ent	Communication & Media Studies			
Social Sciences & Management	Development Studies			
anag	Economics & Econometrics			
≥	Education			
ces	Hospitality & Leisure Management			
cien	Law			
ials	Library & Information Management			
Soc	Politics & International Studies			
	Social Policy & Administration			
	Sociology			
	Sports-related Subjects			
	Statistics & Operational Research	101-150	101-150	101-150





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More Information

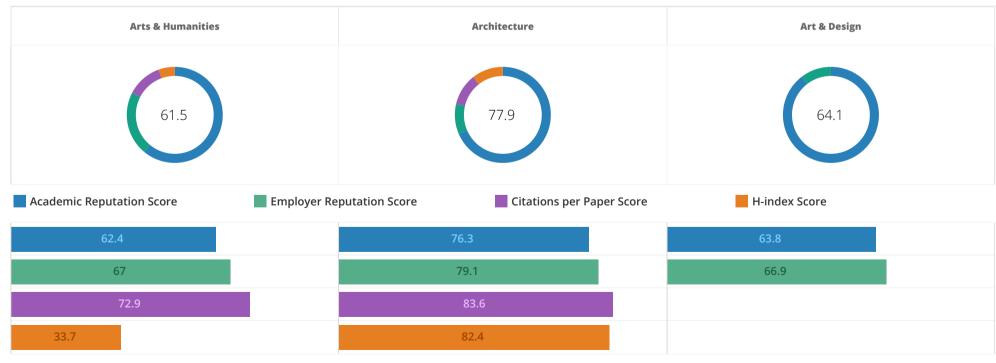
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ARTS & HUMANITIES

RANKINGS PERFORMANCE - ARTS & HUMANITIES AND RELATED SUBJECTS

Arts & Humanities	Architecture	Art & Design
345=	29	51-100

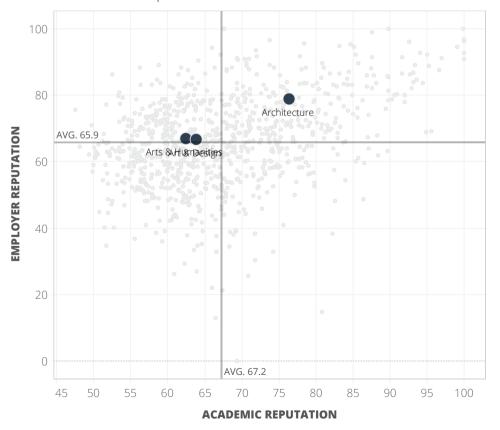
The circles represent the contribution of each indicator to the overall score, as displayed in the centre. The bar charts provide the scores by indicator. The maximum achieabable in each of them is 100 points.



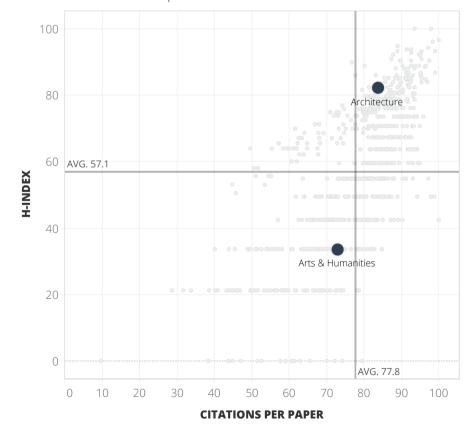
UNIVERSITAT POLITÈCNICA DE CATALUNYA

The following charts provide a view of the **reputational** (left side) and **research-related** (right side) indicators used in the Rankings by Subject. The scatter plots combine two relevant variables, highlighting the institution's performance compared to institutions globally.

ARTS & HUMANITIES | ACADEMIC & EMPLOYER REPUTATION SCORES



ARTS & HUMANITIES | CITATIONS PER PAPER & H-INDEX SCORES

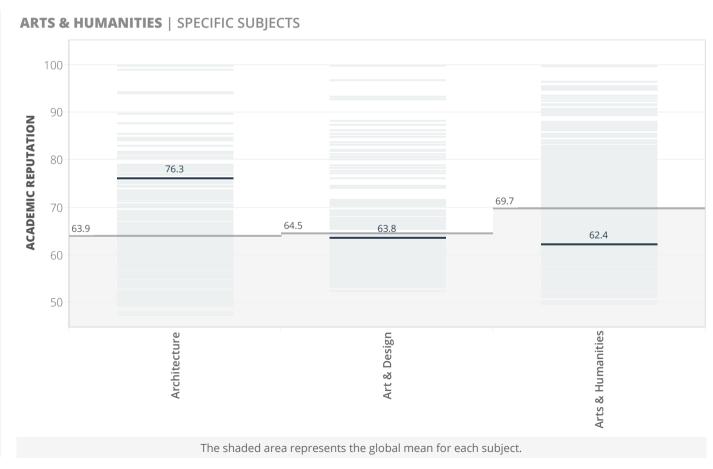


UNIVERSITAT POLITÈCNICA DE CATALUNYA

ACADEMIC REPUTATION SCORES

The charts below present the **Academic Reputation Scores** for the institutions featured in the rankings **Institution's results** | **global mean**.





UNIVERSITAT POLITÈCNICA DE CATALUNYA

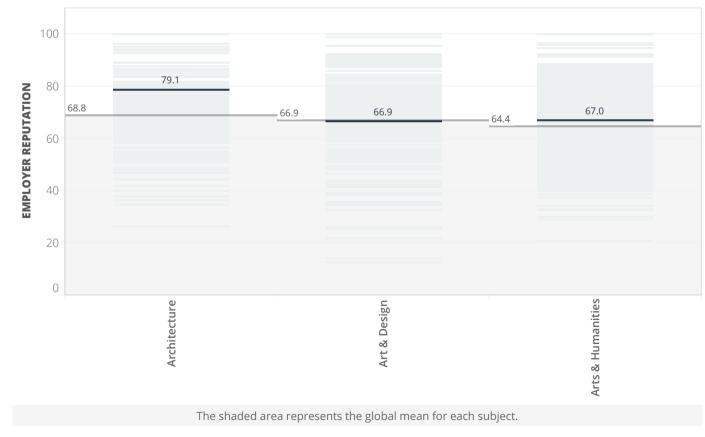
EMPLOYER REPUTATION SCORES

The charts below present the **Employer Reputation Scores** for the institutions featured in the rankings **Institution's results** | **global mean**.

BROAD SUBJECT AREA

21.2

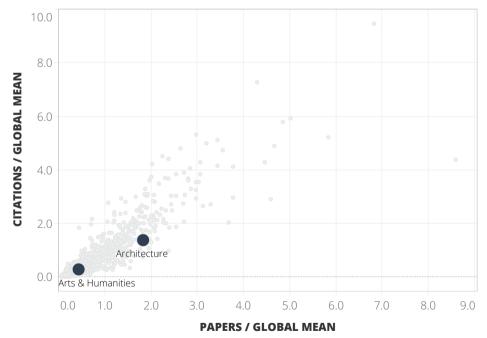
ARTS & HUMANITIES | SPECIFIC SUBJECTS



UNIVERSITAT POLITÈCNICA DE CATALUNYA

ARTS & HUMANITIES | PAPERS AND CITATIONS COUNTS - DIFFERENCE AGAINST GLOBAL MEAN BY SUBJECT

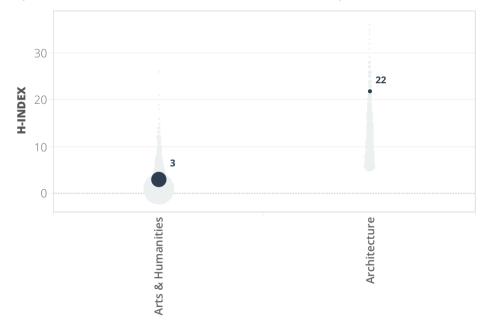
The chart below presents the relationship between **the institution's counts of papers and citations** and the respective global means by subject. A ratio of 1.0 represents a performance on a par with the global average.



In 2019, Architecture delivered the best relative results in terms of citations for Universitat Politècnica de Catalunya, representing roughly 1.4 times the global average. On the other hand, the institution published 1.8 times the average number of papers indexed globally over the 2012-2016 period.

ARTS & HUMANITIES | H-INDEX BY SUBJECT

The chart provides a view of the performance in the h-index, highlighting the **institution's index** against the global performance. The size of the bubble represents the total number of institutions recorded in each performance level.



In the 2019 edition of the rankings, Architecture was Universitat Politècnica de Catalunya's subject with the highest h-index at 22. This means that 22 papers published by the institution from 2012-2016 attracted at least 22 citations in a six year period (2012-2017).



ENGINEERING & TECHNOLOGY

RANKINGS PERFORMANCE - ENGINEERING & TECHNOLOGY AND RELATED SUBJECTS

Engineering & Technology	Chemical Engineering	Civil Engineering	Computer Science	Electrical Engineering	Mechanical Engineering
85=	201-250	23	101-150	51-100	51-100

The circles represent the contribution of each indicator to the overall score, as displayed in the centre. The bar charts provide the scores by indicator. The maximum achieabable in each of them is 100 points.

Engineering & Technology	Chemical Engineering	Civil Engineering	Computer Science	Electrical Engineering	Mechanical Engineering
79.5	63.0	83.1	69.9	77.1	75.4
Academic Reputation Score	Employer Re	putation Score	Citations per Paper Score	H-index Score	
83.5	49.8	84.3	61.6	72.7	70.4
68.9	73.4	78.9	67	71.7	80
83.9	75.5	85.6	83.1	90.3	80.5

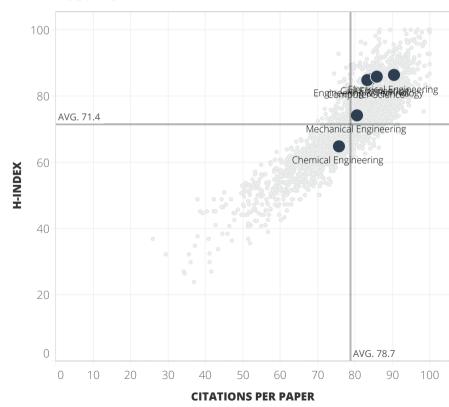
UNIVERSITAT POLITÈCNICA DE CATALUNYA

The following charts provide a view of the **reputational** (left side) and **research-related** (right side) indicators used in the Rankings by Subject. The scatter plots combine two relevant variables, highlighting the institution's performance compared to institutions globally.

ENGINEERING & TECHNOLOGY | ACADEMIC & EMPLOYER REPUTATION SCORES



ENGINEERING & TECHNOLOGY | CITATIONS PER PAPER & H-INDEX SCORES



UNIVERSITAT POLITÈCNICA DE CATALUNYA

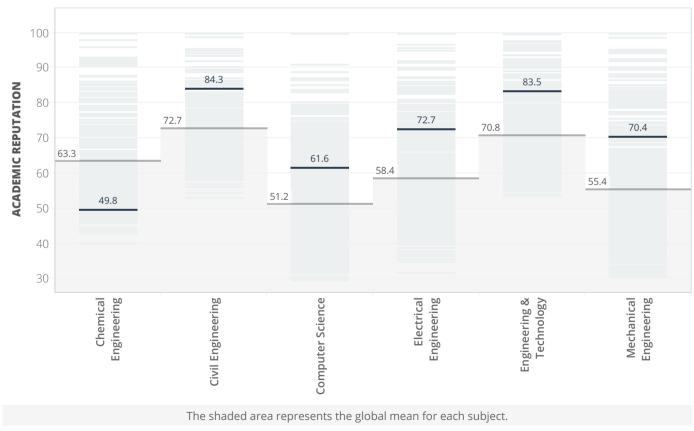
ACADEMIC REPUTATION SCORES

The charts below present the **Academic Reputation Scores** for the institutions featured in the rankings **Institution's results** | **global mean**.

BROAD SUBJECT AREA 83.5

53.6

ENGINEERING & TECHNOLOGY | SPECIFIC SUBJECTS

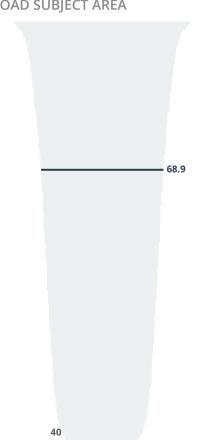


UNIVERSITAT POLITÈCNICA DE CATALUNYA

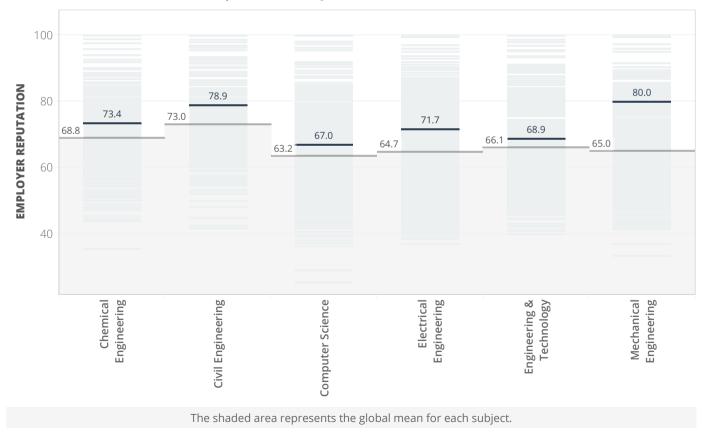
EMPLOYER REPUTATION SCORES

The charts below present the **Employer Reputation Scores** for the institutions featured in the rankings **Institution's results** | **global mean**.

BROAD SUBJECT AREA



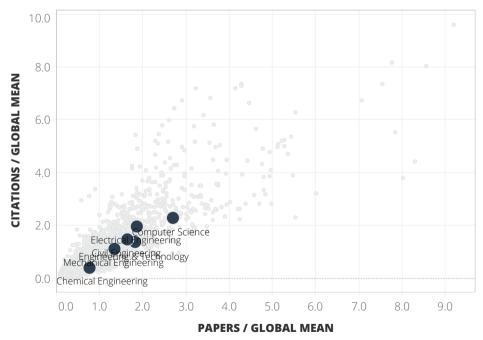
ENGINEERING & TECHNOLOGY | SPECIFIC SUBJECTS



UNIVERSITAT POLITÈCNICA DE CATALUNYA

ENGINEERING & TECHNOLOGY | PAPERS AND CITATIONS COUNTS - DIFFERENCE AGAINST GLOBAL MEAN BY SUBJECT

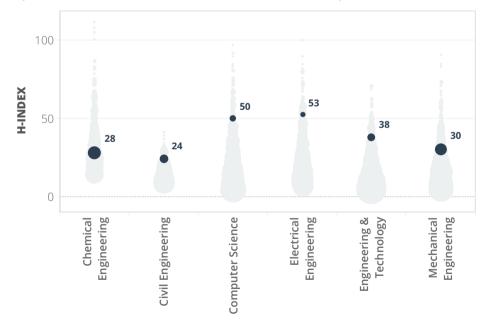
The chart below presents the relationship between **the institution's counts of papers and citations** and the respective global means by subject. A ratio of 1.0 represents a performance on a par with the global average.



In 2019, Computer Science delivered the best relative results in terms of citations for Universitat Politècnica de Catalunya, representing roughly 2.3 times the global average. On the other hand, the institution published 2.7 times the average number of papers indexed globally over the 2012-2016 period.

ENGINEERING & TECHNOLOGY | H-INDEX BY SUBJECT

The chart provides a view of the performance in the h-index, highlighting the **institution's index** against the global performance. The size of the bubble represents the total number of institutions recorded in each performance level.



In the 2019 edition of the rankings, Electrical Engineering was Universitat Politècnica de Catalunya's subject with the highest h-index at 53. This means that 53 papers published by the institution from 2012-2016 attracted at least 53 citations in a six year period (2012-2017).

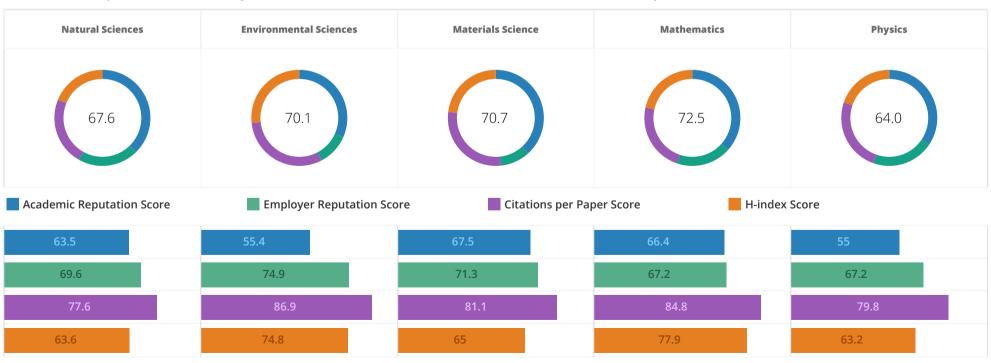


NATURAL SCIENCES

RANKINGS PERFORMANCE - NATURAL SCIENCES AND RELATED SUBJECTS

Natural Sciences	Environmental Sciences	Materials Science	Mathematics	Physics
279=	151-200	151-200	101-150	301-350

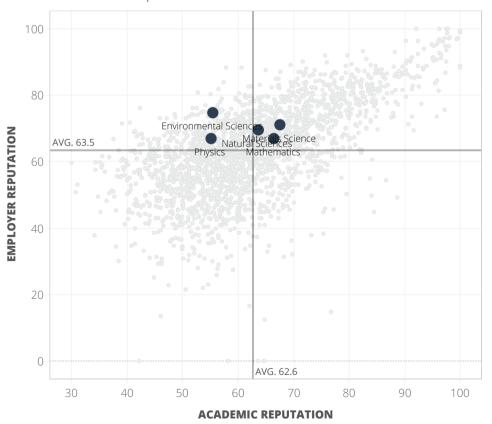
The circles represent the contribution of each indicator to the overall score, as displayed in the centre. The bar charts provide the scores by indicator. The maximum achieabable in each of them is 100 points.



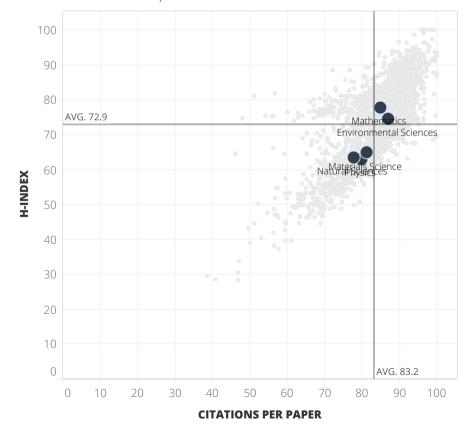
UNIVERSITAT POLITÈCNICA DE CATALUNYA

The following charts provide a view of the **reputational** (left side) and **research-related** (right side) indicators used in the Rankings by Subject. The scatter plots combine two relevant variables, highlighting the institution's performance compared to institutions globally.

NATURAL SCIENCES | ACADEMIC & EMPLOYER REPUTATION SCORES



NATURAL SCIENCES | CITATIONS PER PAPER & H-INDEX SCORES



UNIVERSITAT POLITÈCNICA DE CATALUNYA

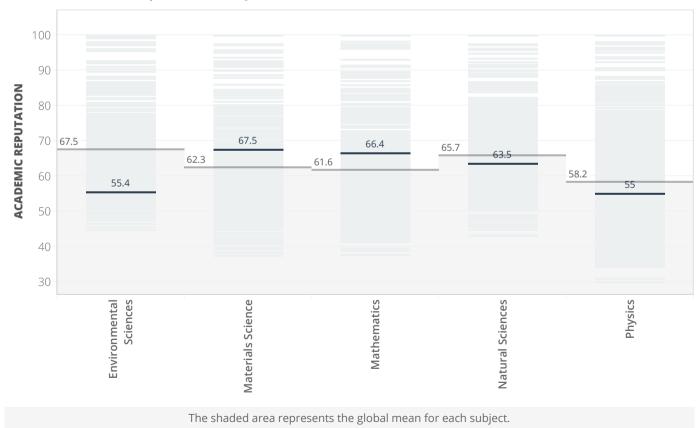
ACADEMIC REPUTATION SCORES

The charts below present the **Academic Reputation Scores** for the institutions featured in the rankings **Institution's results** | **global mean**.

BROAD SUBJECT AREA

47.3

NATURAL SCIENCES | SPECIFIC SUBJECTS



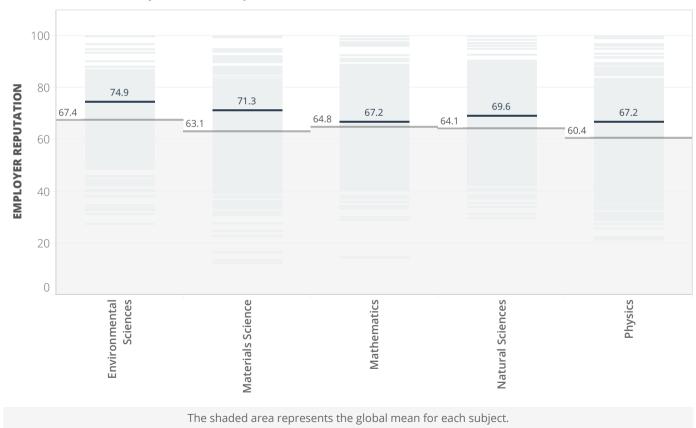
UNIVERSITAT POLITÈCNICA DE CATALUNYA

EMPLOYER REPUTATION SCORES

The charts below present the **Employer Reputation Scores** for the institutions featured in the rankings **Institution's results** | **global mean**.

BROAD SUBJECT AREA

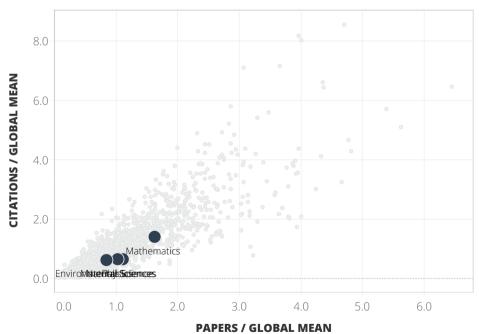
NATURAL SCIENCES | SPECIFIC SUBJECTS



UNIVERSITAT POLITÈCNICA DE CATALUNYA

NATURAL SCIENCES | PAPERS AND CITATIONS COUNTS - DIFFERENCE AGAINST GLOBAL MEAN BY SUBJECT

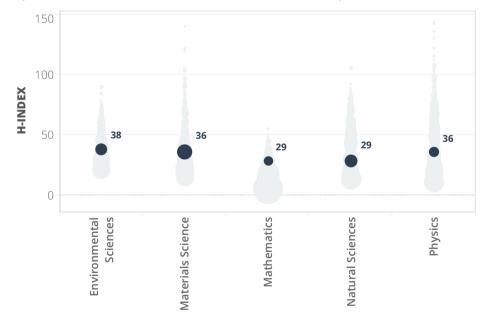
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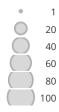
In 2019, Mathematics delivered the best relative results in terms of citations for Universitat Politècnica de Catalunya, representing roughly 1.4 times the global average. On the other hand, the institution published 1.6 times the average number of papers indexed globally over the 2012-2016 period.

NATURAL SCIENCES | H-INDEX BY SUBJECT

The chart provides a view of the performance in the h-index, highlighting the **institution's index** against the global performance. The size of the bubble represents the total number of institutions recorded in each performance level.



In the 2019 edition of the rankings, Environmental Sciences was Universitat Politècnica de Catalunya's subject with the highest h-index at 38. This means that 38 papers published by the institution from 2012-2016 attracted at least 38 citations in a six year period (2012-2017).

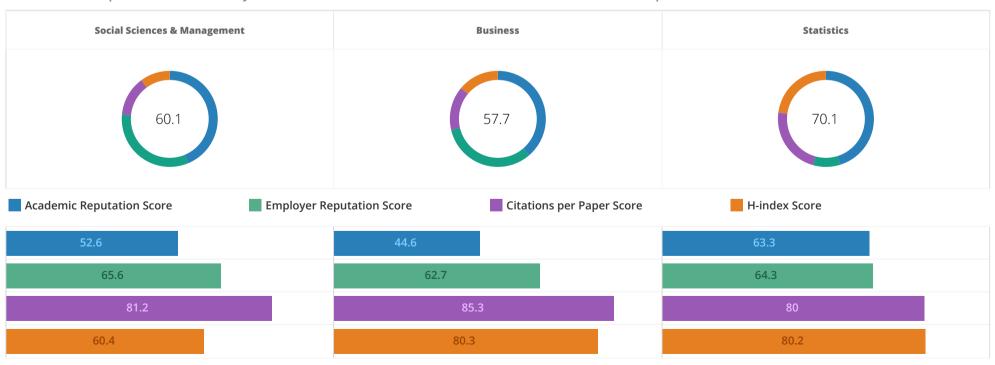


SOCIAL SCIENCES & MANAGEMENT

RANKINGS PERFORMANCE - SOCIAL SCIENCES & MANAGEMENT AND RELATED SUBJECTS

Social Sciences & Management	Business	Statistics
394	301-350	101-150

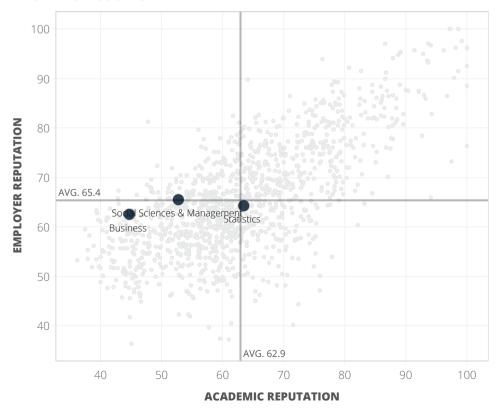
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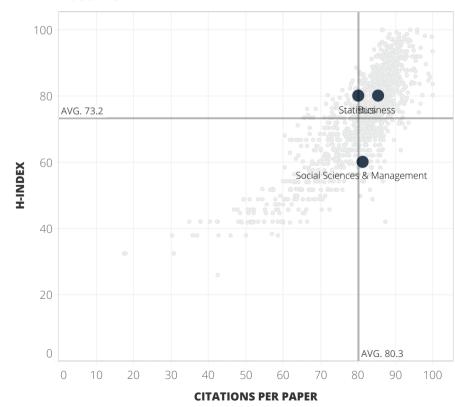
UNIVERSITAT POLITÈCNICA DE CATALUNYA

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SOCIAL SCIENCES & MANAGEMENT | ACADEMIC & EMPLOYER REPUTATION SCORES



SOCIAL SCIENCES & MANAGEMENT | CITATIONS PER PAPER & H-INDEX SCORES



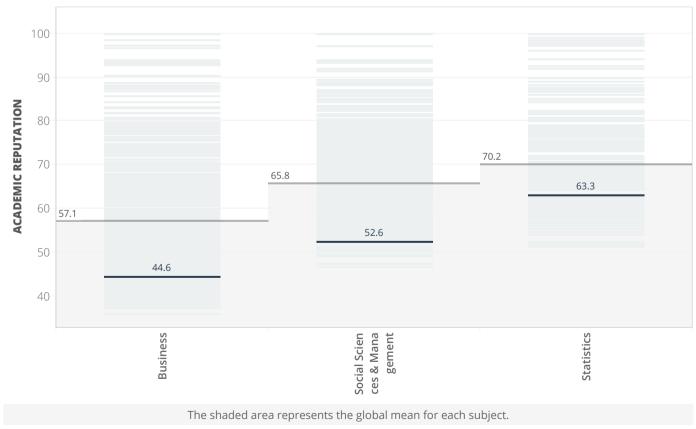
UNIVERSITAT POLITÈCNICA DE CATALUNYA

ACADEMIC REPUTATION SCORES

The charts below present the **Academic Reputation Scores** for the institutions featured in the rankings **Institution's results** | **global mean**.

BROAD SUBJECT AREA 63.5



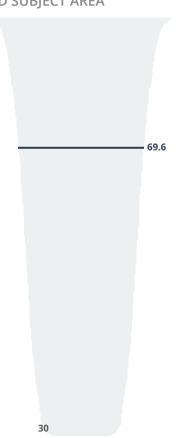


UNIVERSITAT POLITÈCNICA DE CATALUNYA

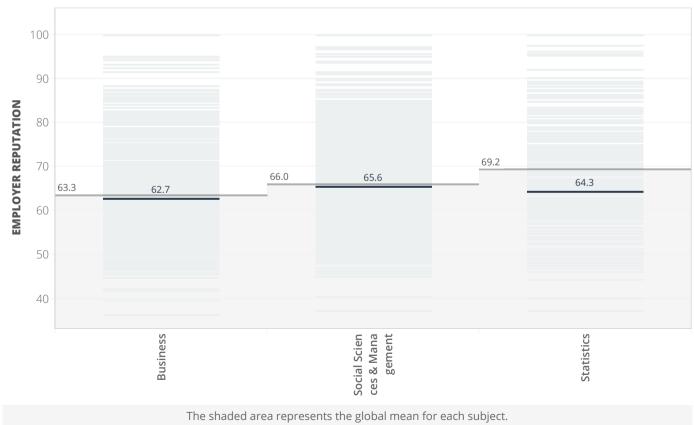
EMPLOYER REPUTATION SCORES

The charts below present the **Employer Reputation Scores** for the institutions featured in the rankings **Institution's results** | **global mean**.

BROAD SUBJECT AREA



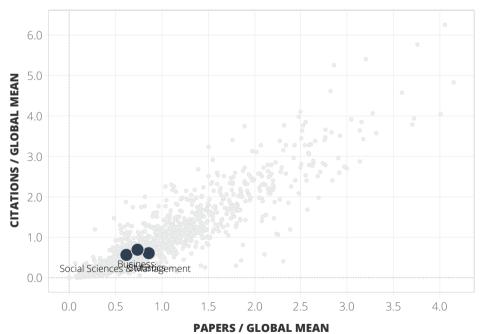
SOCIAL SCIENCES & MANAGEMENT | SPECIFIC SUBJECTS



UNIVERSITAT POLITÈCNICA DE CATALUNYA

SOCIAL SCIENCES & MANAGEMENT | PAPERS AND CITATIONS COUNTS - DIFFERENCE AGAINST GLOBAL MEAN BY SUBJECT

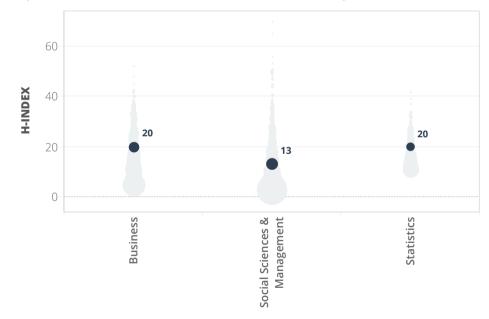
The chart below presents the relationship between **the institution's counts of papers and citations** and the respective global means by subject. A ratio of 1.0 represents a performance on a par with the global average.



In 2019, Business delivered the best relative results in terms of citations for Universitat Politècnica de Catalunya, representing roughly 0.7 times the global average. On the other hand, the institution published 0.7 times the average number of papers indexed globally over the 2012-2016 period.

SOCIAL SCIENCES & MANAGEMENT | H-INDEX BY SUBJECT

The chart provides a view of the performance in the h-index, highlighting the **institution's index** against the global performance. The size of the bubble represents the total number of institutions recorded in each performance level.



In the 2019 edition of the rankings, Business was Universitat Politècnica de Catalunya's subject with the highest h-index at 20. This means that 20 papers published by the institution from 2012-2016 attracted at least 20 citations in a six year period (2012-2017).



APPENDICES DEFINITIONS, WEIGHTINGS, THRESHOLDS AND HEADLINE FIGURES.

METHODOLOGY: DEFINITIONS & WEIGHTINGS

ACADEMIC REPUTATION

Between 2014 and 2018 QS has collected votes from over 83,000 academics around the world.

Each academic counted has given their opinion on universities in their fields of expertises.

The employability metric is based on employer reputation. Over 42,000 global employer votes have been taken into account between 2014 and 2018 giving us a large pool of information

EMPLOYER REPUTATION

The employability metric is based on employer reputation. Over 42,000 global employer votes have been taken into account between 2014 and 2018 giving us a large pool of information in terms of hiring levels. Employers across all sectors and industries have taken part in the survey and include Facebook, Google, Uber, Wells Fargo, Bank of America etc.

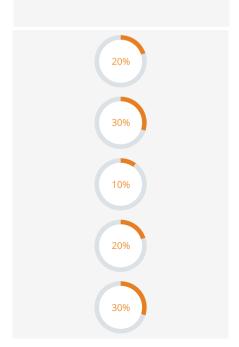
CITATIONS PER PAPER

This ratio measures the average number of citations obtained per publication, and is an estimate of the impact and quality of the scientific work done by universities. To avoid anomalous results, only the institutions producing a minumum number of papers in the last five years are evaluated.

H-INDEX

The h-index is an index that attempts to measure both the productivity and impact of the work published by the insitutions' scientists and scholars. The index is based on the set of the institution's most cited papers and the number of citations that they have received in other publications.



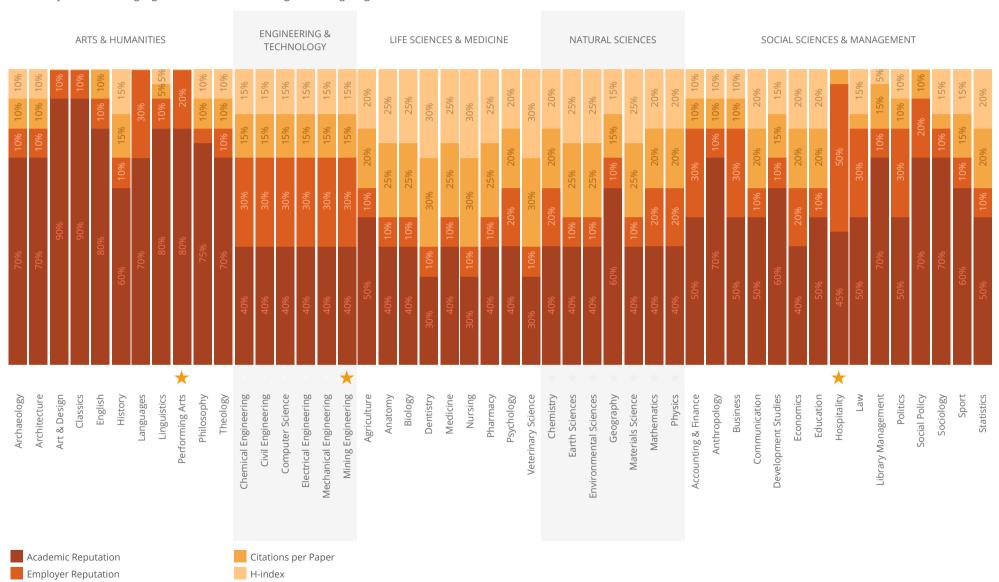




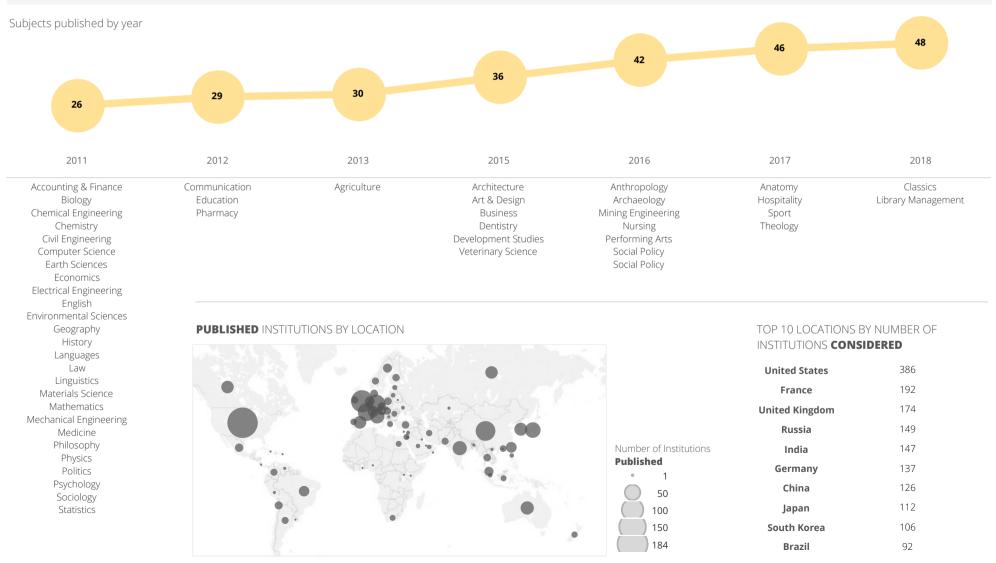


We use a variable approach to the weightings for the different subjects. The chart below provides details of the combinations used in the 2019 edition of the rankings.

Note: Subjects that are highlighted with Stars have changed the weightings in this edition.



The QS World University Rankings® by Subject ranks the world's top universities in individual subject areas, covering 48 disciplines as of 2019. A list of the considered subjects, grouped by the year of first release, is presented below.



The charts below present the number of institutions considered and published in each of the relevant subject areas.

Subjects Locations Institutions

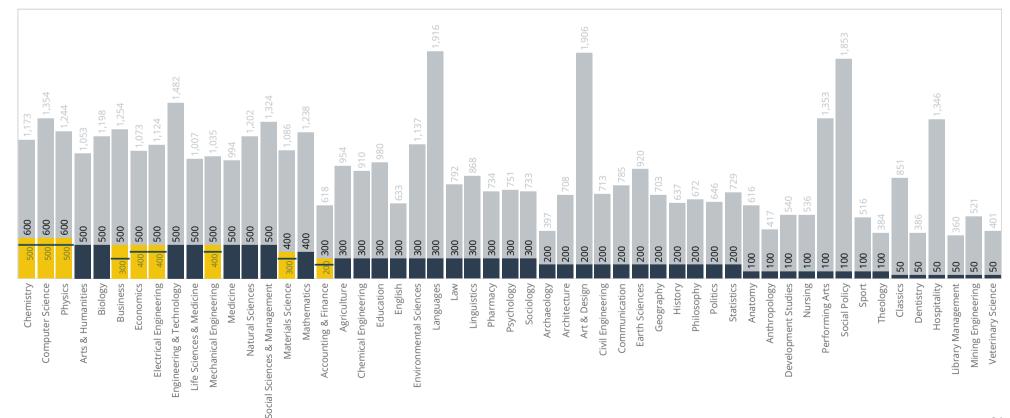
48

153

1,222

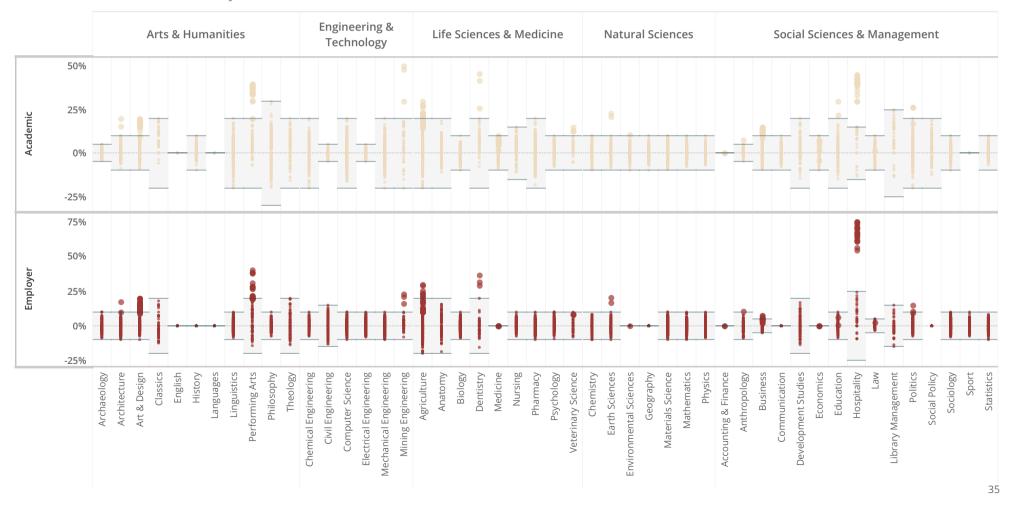
INSTITUTIONS CONSIDERED AND PUBLISHED BY SUBJECT - YEAR 2019

Subjects with highlight color have extended publishing ranges.



In the QS Subject Rankings methodology, a specialization adjustment is applied to the original reputation scores in order to boost the performance of those institutions that present a stronger focus in specific subjects. The original rank calculated for each subject is compared against the rank obtained in the relevant broad subject area containing the said subject according to the QS mapping. For example, the results in Biology are compared against the overall rank in Life Sciences & Medicine. Whenever the rank difference between the subject and the broad area exceeds five places, a positive or negative adjustment is applied in the Reputation score. The method compares the proportional difference for each institution against the maximum and minimum recorded globally. The maximum change cannot exceed the percentages presented in the chart below.

DISTRIBUTION OF SPECIALIST ADJUSTMENTS - REPUTATION

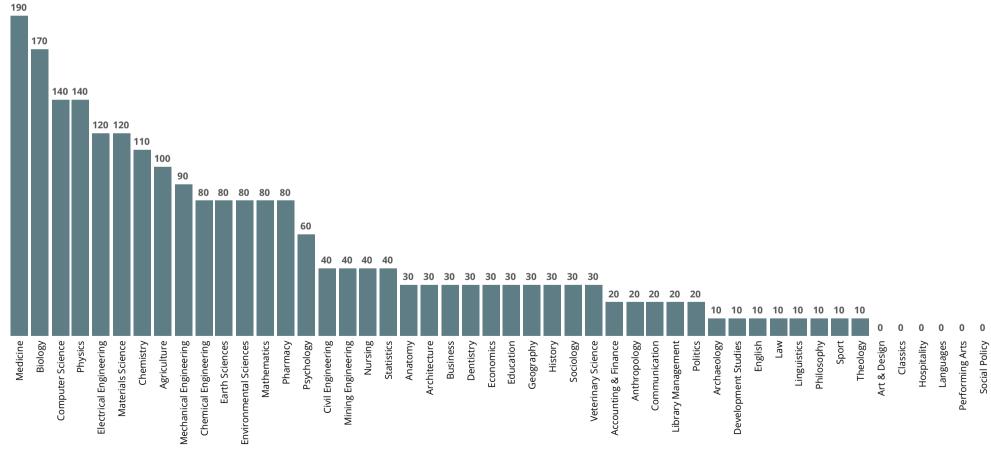


In order to feature in any discipline table, an institution must meet three simple prerequisites:

- Offer undergraduate or taught postgraduate programmes in the given discipline
- Exceed the minimum required score for the academic and/or employer reputation indicators
- Exceed the five-year threshold for number of papers published and indexed by Scopus in the given discipline

The following chart discloses the minimum number of papers required to be considered in the latest edition of the rankings by subject.

PAPER THRESHOLD BY SUBJECT - YEAR 2019
MINIMUM NUMBER NUMBER OF PUBLICATIONS INDEXED BY SCOPUS REQUIRED TO BE CONSIDERED IN THE RANKINGS.



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