

**FACT FILE
SUMMARY
VERSION**

UNIVERSITI SAINS MALAYSIA (USM)

MALAYSIA

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THE 2019 QS WORLD UNIVERSITY RANKINGS BY SUBJECT
WILL BE LAUNCHED ON 27 FEBRUARY 2019 ON www.topuniversities.com

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.



I hope you will find this useful, but we have also prepared a more extensive EXTENDED FACT FILE for you, presenting your institution in context, subject by subject, indicator by indicator in greater depth. Please go to https://qs.com/extended_fact_files_2019_subject_rankings to file a request and the team will aim to get back to you within a couple of days depending on the volume of requests.

Selina Griffin
Rankings Manager, QS



RANKINGS BY SUBJECT **SUMMIT 2019**



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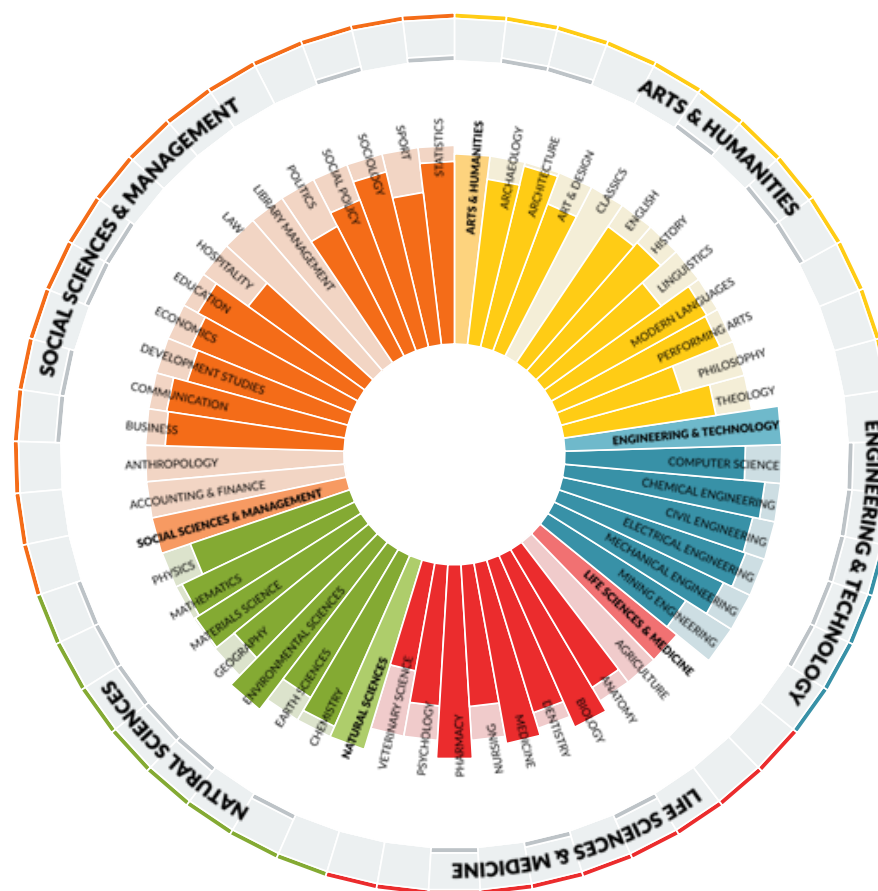
AT A GLANCE

RANKED IN **5** BROAD SUBJECT AREAS

SCORED IN **42** SUBJECTS

RANKED IN **25** SUBJECTS

TOP 100 FOR **1** SUBJECT



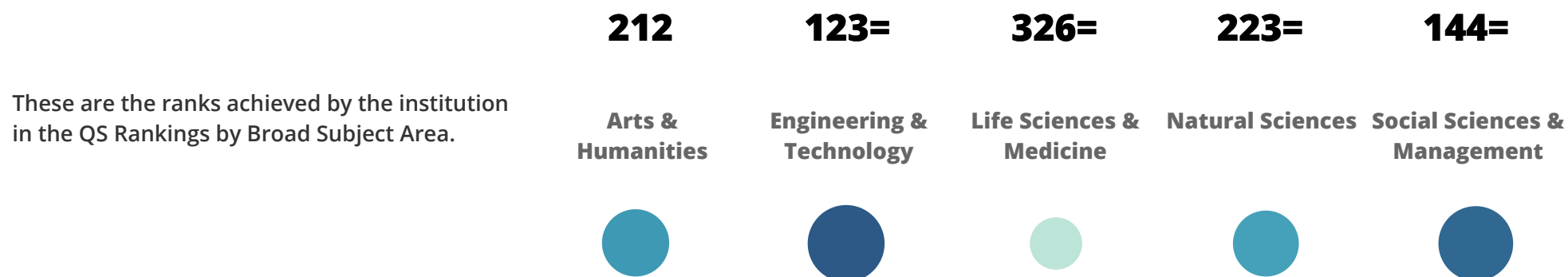
- Arts & Humanities
- Engineering & Technology
- Life Sciences & Medicine
- Natural Sciences
- Social Sciences & Management

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

2019 QS WORLD UNIVERSITY RANKINGS BY SUBJECT AREA

UNIVERSITI SAINS MALAYSIA (USM)

Malaysia



OVERALL SCORES BY SUBJECT AREA



In 2019, Universiti Sains Malaysia (USM) has been ranked in 5 out of 5 broad subject areas.

Engineering & Technology is the institution's strongest field at **123=** and an overall score of **76.7**.

2019 QS WORLD UNIVERSITY RANKINGS BY SUBJECT

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 | Arts & Humanities | 212 | 3 | 69.2 | 74.8 | 73.7 | 33.7 | 67.2 |
| | Archaeology | 101-150 | 1 | 57.6 | 65.8 | 63.1 | 56.8 | 58.9 |
| | Architecture / Built Environment | 51-100 | 2 | 60.9 | 65.8 | 88.1 | 78.0 | 65.8 |
| | Art & Design | | | 54.7 | 61.7 | | | 55.4 |
| | English Language & Literature | 151-200 | 4 | 55.9 | 63.9 | 70.0 | | 58.1 |
| | History | | | 65.4 | 62.1 | 54.9 | 40.8 | 59.8 |
| | Linguistics | 201-250 | 3 | 48.9 | 61.0 | 63.2 | 50.4 | 50.9 |
| | Modern Languages | 251-300 | 3 | 62.9 | 62.6 | | | 62.8 |
| | Performing Arts | | | 62.9 | 59.2 | | | 62.2 |
| | Philosophy | | | 41.8 | 63.1 | 53.9 | 42.2 | 44.1 |
| | Theology, Divinity & Religious Studies | | | 53.6 | 75.1 | 41.0 | 52.9 | 54.4 |
| Engineering & Technology | Engineering & Technology | 123= | 3 | 73.1 | 76.8 | 82.5 | 80.6 | 76.7 |
| | Computer Science & Information Systems | 201-250 | 3 | 55.0 | 65.8 | 77.4 | 69.8 | 63.8 |
| | Engineering - Chemical | 101-150 | 3 | 65.3 | 70.9 | 81.5 | 76.8 | 71.1 |
| | Engineering - Civil & Structural | 101-150 | 3 | 61.7 | 68.7 | 81.6 | 74.6 | 68.7 |
| | Engineering - Electrical & Electronic | 101-150 | 4 | 60.5 | 65.8 | 89.4 | 81.4 | 69.6 |
| | Engineering - Mechanical, Aeronautical & Manufac.. | 151-200 | 3 | 55.8 | 67.8 | 84.4 | 73.2 | 66.3 |
| | Engineering - Mineral & Mining | | | 37.7 | 72.7 | 76.4 | 62.1 | 57.7 |
| Life Sciences & Medicine | Life Sciences & Medicine | 326= | 2= | 75.1 | 81.0 | 54.7 | 41.7 | 62.2 |
| | Agriculture & Forestry | | | | | | | |
| | Anatomy & Physiology | | | 56.6 | 67.6 | 44.3 | 64.5 | 56.6 |
| | Biological Sciences | 251-300 | 3 | 65.0 | 66.6 | 68.6 | 65.9 | 66.3 |
| | Dentistry | | | 51.2 | 65.1 | 58.3 | 56.8 | 56.4 |
| | Medicine | 251-300 | 3 | 60.7 | 69.4 | 66.2 | 68.0 | 64.8 |
| | Nursing | | | 48.5 | 71.1 | 48.7 | 46.5 | 50.2 |
| | Pharmacy & Pharmacology | 101-150 | 1 | 70.3 | 64.6 | 74.9 | 61.0 | 68.6 |
| | Psychology | | | 59.4 | 64.9 | 38.0 | 28.1 | 50.0 |
| | Veterinary Science | | | 43.3 | 63.3 | 34.8 | 29.7 | 38.7 |

2019 QS WORLD UNIVERSITY RANKINGS BY SUBJECT

| | | Global Rank | Domestic Rank | Academic | Employer | Citations | H-index | Score |
|------------------------------|-----------------------------------|-------------|---------------|----------|----------|-----------|---------|-------|
| Natural Sciences | Chemistry | 201-250 | 3 | 60.1 | 70.7 | 75.3 | 64.0 | 66.0 |
| | Earth & Marine Sciences | | | 50.6 | 70.1 | 66.2 | 67.9 | 60.8 |
| | Environmental Sciences | 101-150 | 2 | 66.0 | 71.8 | 87.5 | 75.8 | 74.4 |
| | Geography | 151-200 | 3 | 64.2 | 68.7 | 58.2 | 47.4 | 61.2 |
| | Materials Science | 151-200 | 3 | 59.8 | 72.6 | 81.9 | 70.3 | 69.2 |
| | Mathematics | 151-200 | 2 | 62.5 | 66.1 | 79.3 | 67.5 | 67.6 |
| | Natural Sciences | 223= | 2 | 68.3 | 78.0 | 76.1 | 59.5 | 70.0 |
| | Physics & Astronomy | 401-450 | 5 | 59.7 | 61.4 | 66.5 | 50.3 | 59.5 |
| Social Sciences & Management | Accounting & Finance | | | | | | | |
| | Anthropology | | | | | | | |
| | Business & Management Studies | 201-250 | 4 | 56.4 | 64.9 | 75.2 | 79.6 | 63.2 |
| | Communication & Media Studies | 151-200 | 3 | 61.7 | 70.9 | 69.2 | 60.1 | 63.8 |
| | Development Studies | | | 53.5 | 63.2 | 76.2 | 59.7 | 58.8 |
| | Economics & Econometrics | 201-250 | 4 | 59.1 | 65.5 | 66.5 | 57.4 | 61.5 |
| | Education | 151-200 | 3 | 57.2 | 67.3 | 79.4 | 66.4 | 64.5 |
| | Hospitality & Leisure Management | | | 49.3 | 51.5 | 55.8 | | 50.7 |
| | Law | | | | | | | |
| | Library & Information Management | | | | | | | |
| | Politics & International Studies | | | 55.6 | 60.5 | 34.6 | 21.5 | 51.6 |
| | Social Policy & Administration | | | 61.3 | 69.7 | | | 56.9 |
| | Social Sciences & Management | 144= | 3 | 67.0 | 76.3 | 77.9 | 60.4 | 70.2 |
| | Sociology | 201-250 | 3 | 67.9 | 65.8 | 52.4 | 46.2 | 63.7 |
| | Sports-related Subjects | | | 56.2 | 68.1 | 43.8 | 47.3 | 54.2 |
| | Statistics & Operational Research | 151-200 | 2 | 61.3 | 63.9 | 67.1 | 70.4 | 64.5 |

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.

2019 QS WORLD UNIVERSITY RANKINGS BY SUBJECT

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

| | | 2017 | 2018 | 2019 |
|------------------------------|---|---------|---------|---------|
| Arts & Humanities | Arts & Humanities | 144 | 91= | 212 |
| | Art & Design | 101-150 | 101-150 | |
| | History | | | |
| | Archaeology | | | 101-150 |
| | Architecture / Built Environment | 51-100 | 51-100 | 51-100 |
| | English Language & Literature | 101-150 | 151-200 | 151-200 |
| | Linguistics | 101-150 | 101-150 | 201-250 |
| | Modern Languages | 151-200 | 201-250 | 251-300 |
| | Performing Arts | | | |
| | Philosophy | | | |
| | Theology, Divinity & Religious Studies | 51-100 | 51-100 | |
| Engineering & Technology | Engineering & Technology | 93 | 60= | 123= |
| | Computer Science & Information Systems | 51-100 | 51-100 | 201-250 |
| | Engineering - Chemical | 38= | 51-100 | 101-150 |
| | Engineering - Civil & Structural | 51-100 | 51-100 | 101-150 |
| | Engineering - Mechanical, Aeronautical & Manufact.. | 51-100 | 51-100 | 151-200 |
| | Engineering - Electrical & Electronic | 51-100 | 51-100 | 101-150 |
| | Engineering - Mineral & Mining | 35= | 43= | |
| Life Sciences & Medicine | Life Sciences & Medicine | 269 | 234 | 326= |
| | Agriculture & Forestry | | | |
| | Anatomy & Physiology | | | |
| | Biological Sciences | 201-250 | 251-300 | 251-300 |
| | Medicine | 201-250 | 251-300 | 251-300 |
| | Pharmacy & Pharmacology | 51-100 | 51-100 | 101-150 |
| | Psychology | | | |
| | Veterinary Science | | | |
| | Dentistry | | | |
| | Nursing | | | |
| | | | | |
| | | 2017 | 2018 | 2019 |
| Natural Sciences | Natural Sciences | 232= | 197= | 223= |
| | Chemistry | 151-200 | 151-200 | 201-250 |
| | Earth & Marine Sciences | | | |
| | Environmental Sciences | 49= | 51-100 | 101-150 |
| | Geography | | 151-200 | 151-200 |
| | Materials Science | 101-150 | 101-150 | 151-200 |
| | Mathematics | 151-200 | 151-200 | 151-200 |
| | Physics & Astronomy | 301-350 | 351-400 | 401-450 |
| | | | | |
| | | | | |
| Social Sciences & Management | Social Sciences & Management | 106 | 63= | 144= |
| | Accounting & Finance | | | |
| | Anthropology | | | |
| | Business & Management Studies | 101-150 | 101-150 | 201-250 |
| | Communication & Media Studies | 151-200 | 151-200 | 151-200 |
| | Development Studies | 51-100 | 51-100 | |
| | Economics & Econometrics | 151-200 | 201-250 | 201-250 |
| | Education | 51-100 | 51-100 | 151-200 |
| | Hospitality & Leisure Management | 32= | | |
| | Law | | | |
| | Library & Information Management | | | |
| | Politics & International Studies | | | |
| | Social Policy & Administration | | | |
| | Sociology | 151-200 | 201-250 | 201-250 |
| | Sports-related Subjects | | | |
| | Statistics & Operational Research | 151-200 | 151-200 | 151-200 |



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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.

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.

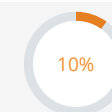
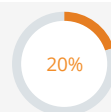
CITATIONS PER PAPER

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 minimum number of papers in the last five years are evaluated.

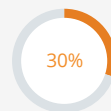
H-INDEX

The h-index is an index that attempts to measure both the productivity and impact of the work published by the institutions' 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.

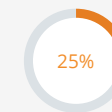
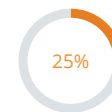
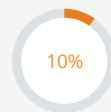
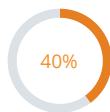
Arts & Humanities



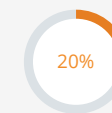
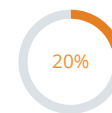
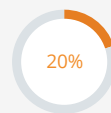
Engineering & Technology



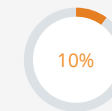
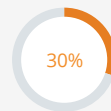
Life Sciences & Medicine



Natural Sciences



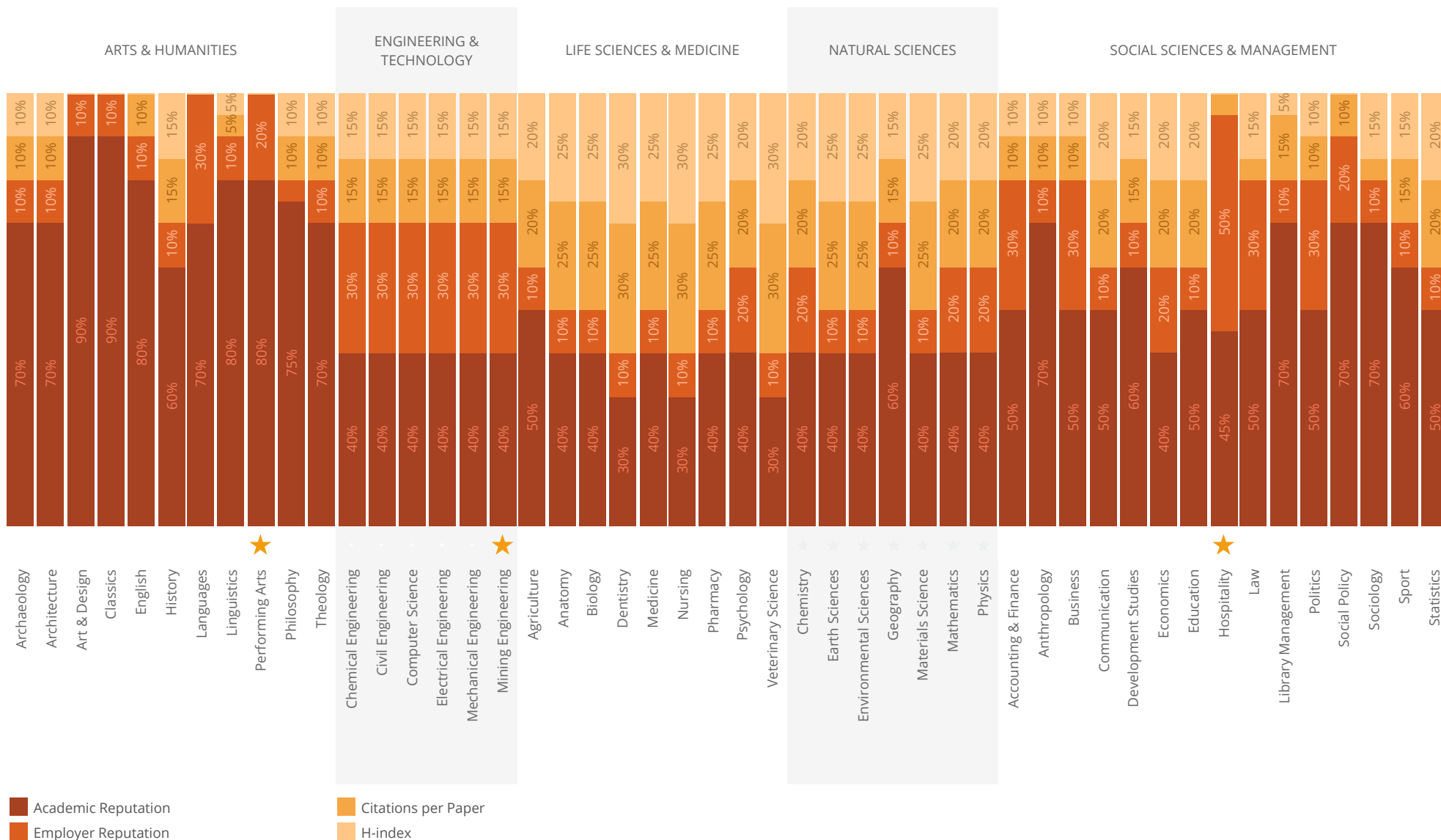
Social Sciences & Management



2019 QS WORLD UNIVERSITY RANKINGS BY SUBJECT

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.

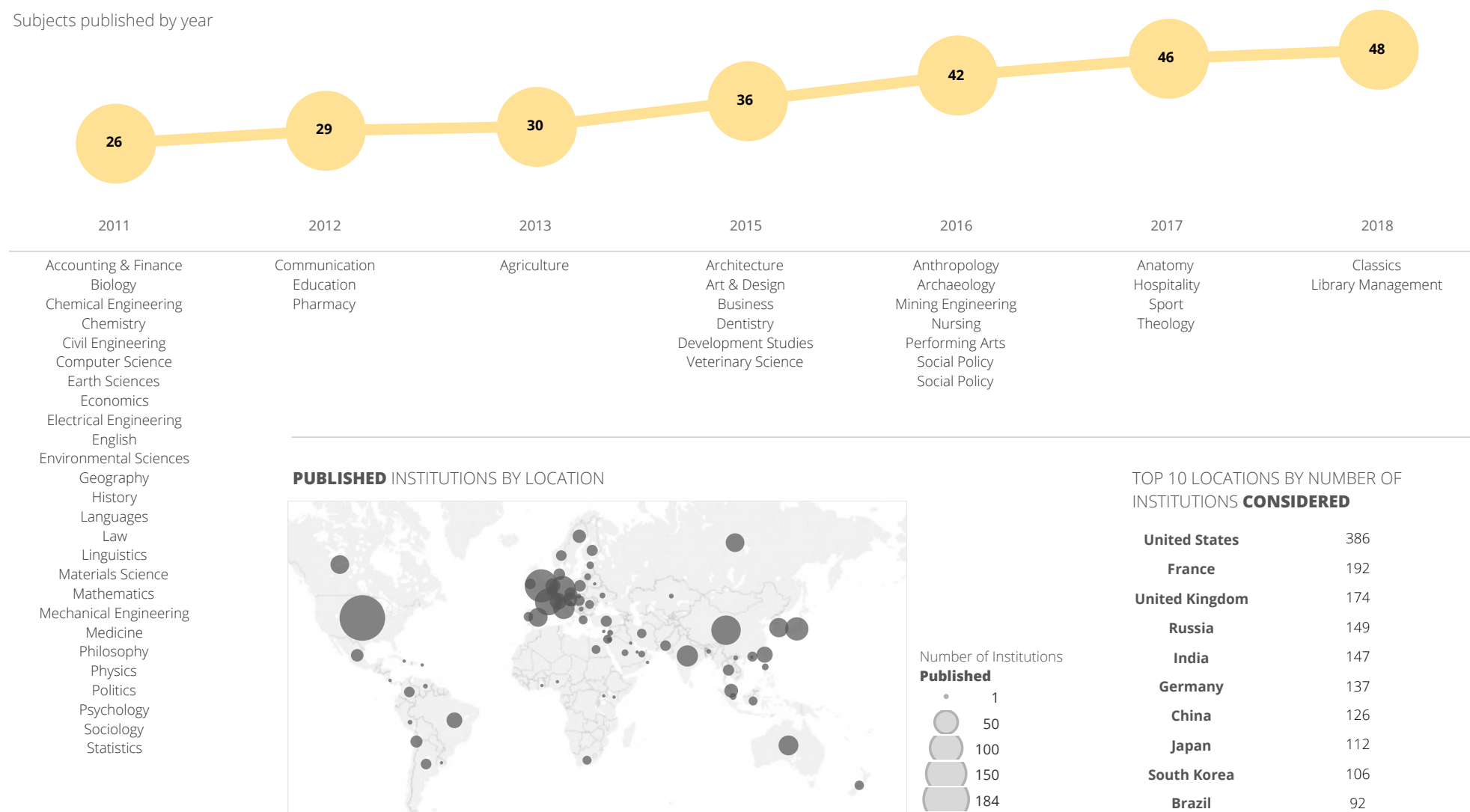
Note: Subjects that are highlighted with Stars have changed the weightings in this edition.



2019 QS WORLD UNIVERSITY RANKINGS BY SUBJECT

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.

Subjects published by year



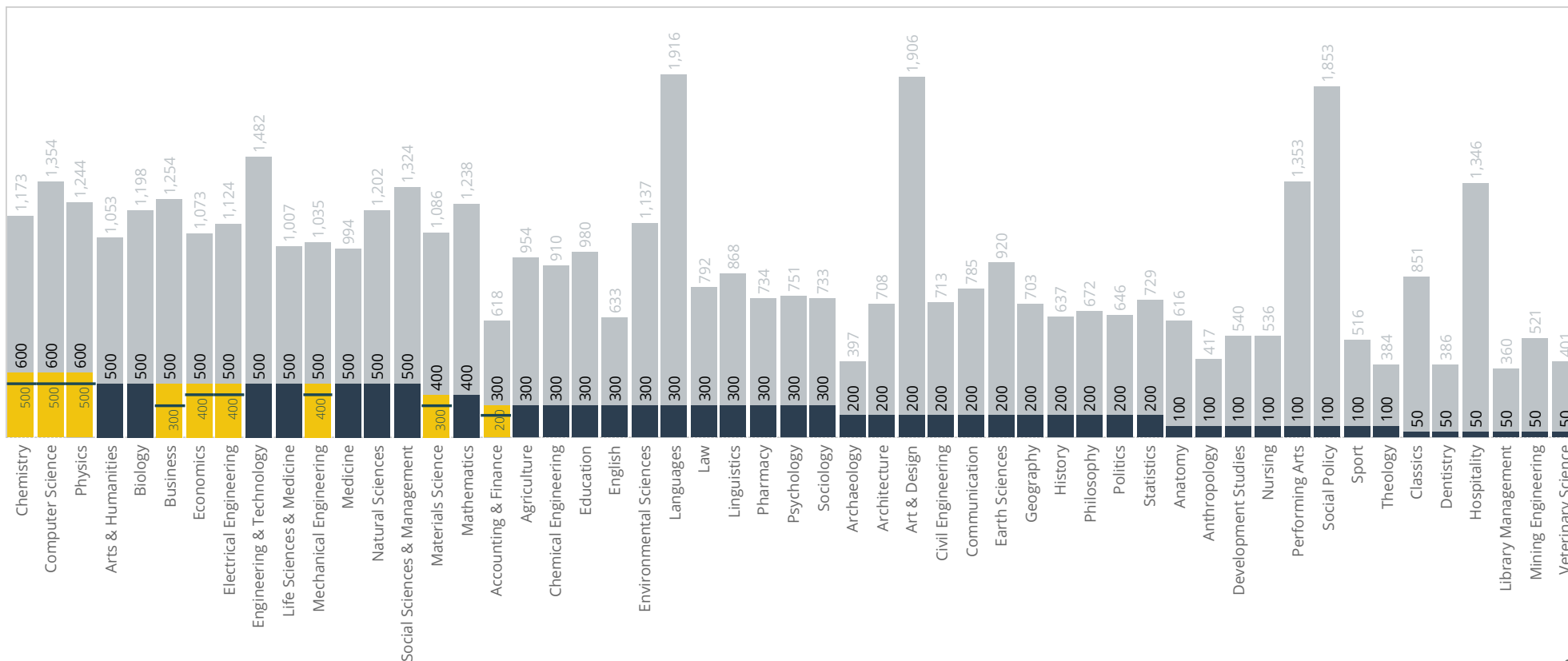
2019 QS WORLD UNIVERSITY RANKINGS BY SUBJECT

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

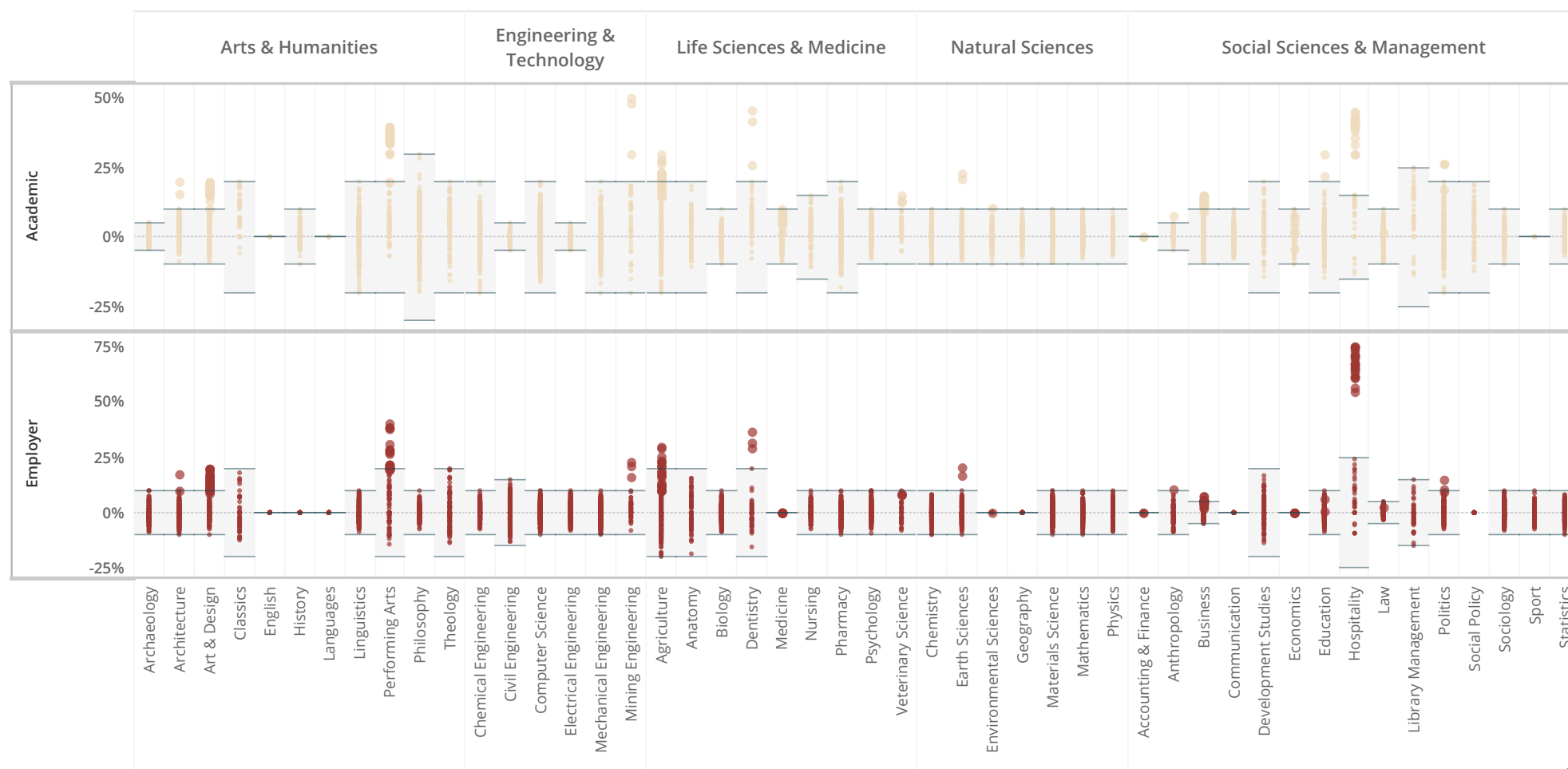
Subjects with **highlight color** have extended publishing ranges.



2019 QS WORLD UNIVERSITY RANKINGS BY SUBJECT

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



2019 QS WORLD UNIVERSITY RANKINGS BY SUBJECT

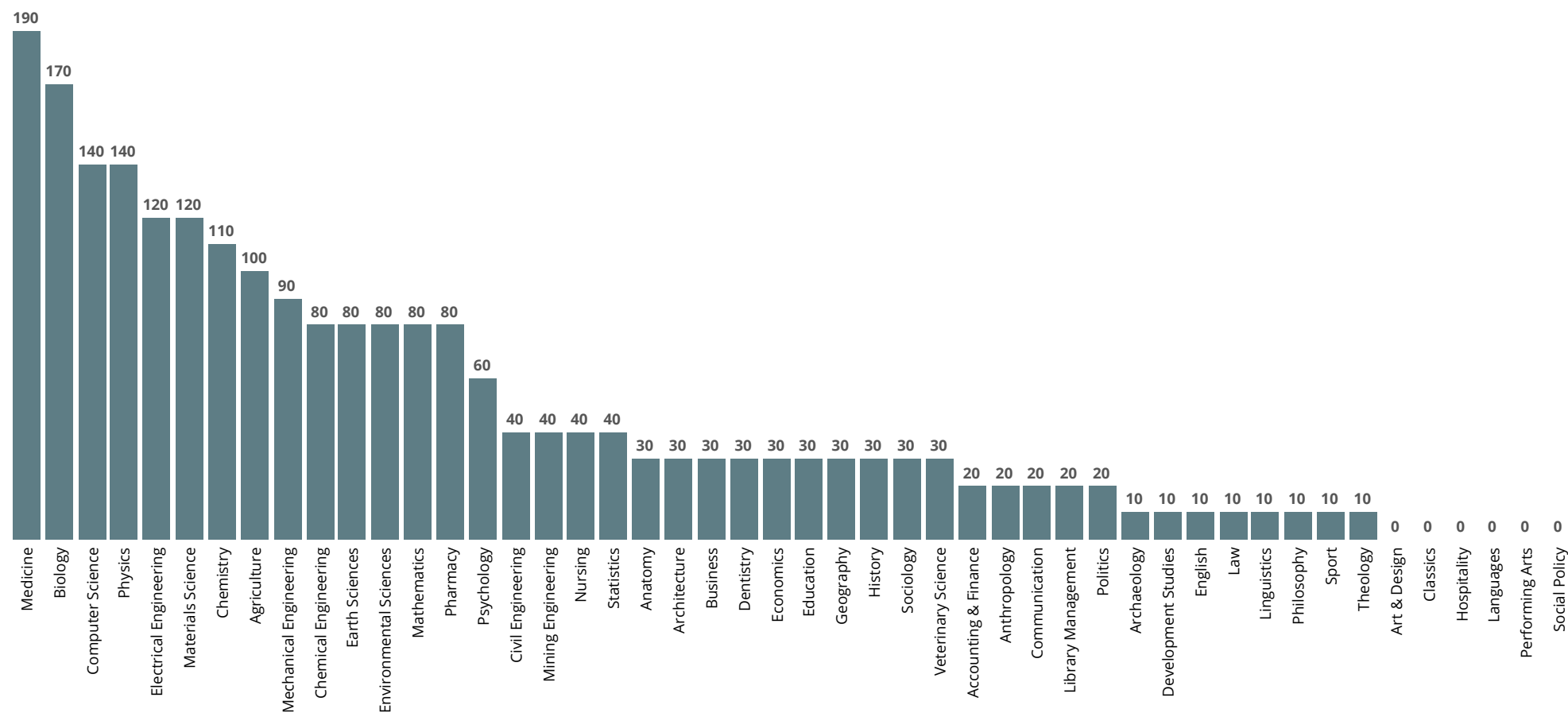
In order to feature in any discipline table, an institution must meet three simple prerequisites:

- 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 OF PUBLICATIONS INDEXED BY SCOPUS REQUIRED TO BE CONSIDERED IN THE RANKINGS.



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