

A Universidade do Porto no Performance Ranking of Scientific Papers for World Universities National Taiwan University NTU Ranking 2021

Reitoria da Universidade do Porto

Gabinete de avaliação e qualidade

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A Universidade do Porto no Performance Ranking of Scientific Papers for World Universities – NTU Ranking 2021

<http://nturanking.csti.tw/>

1. Metodologia do NTU Ranking e participação da U.Porto

“The “Performance Ranking of Scientific Papers for World Universities” is released by National Taiwan University, and is also known as NTU Ranking.

NTU Rankings provides a World University Rankings, rankings by 6 fields, and rankings by 27 selected subjects.”¹

“Sample Selection

Pre-Analysis Institution Screening

The selection of universities in this ranking system was modified in the year of 2021. The selection was based on the outstandingly performed universities that were announced by each of the following ranking programs, with an inclusion of World university rankings and 27 subjects . Ranking programs used as references included the 2020 NTU Rankings, ARWU, QS ,THE, and U.S. News. In the end, 1,417 universities were selected, with 800 universities’ ranking being issued.

Prior to the modification in 2021, the selection of the 800 universities for inclusion in this ranking system was based on information obtained from the Essential Science Indicators (ESI). Of more than 4,000 research institutions listed in ESI, this ranking system first selected the top 1,200 institutions based on the institutions’ number of published journal articles and number of citations. Non-university institutions were then removed from the list, followed by the project staff comparing the remaining universities to those included in the other ranking programs such as ARWU, THE, QS and U.S. News. Data used to assess the performances of the universities was drawn from Clarivate’ s ESI and Web of Science Core Collection (WOS), which included SCI and SSCI, and Journal Citation Reports (JCR).

Authority Control

The concept of authority control was employed to retrieve data indexed under different forms of a university’s name in the aforementioned databases – i.e. the official name, the abbreviated name, and other possible forms of the name. This ranking system also considered the merging and splitting of universities (or different campuses in a university system) and included publications by university-affiliated institutions such as research centers and university hospitals. This effort ensured the accuracy of each university’s number of published journal articles and the subsequent citation statistics.

This ranking system addressed the flaw caused by the classification of institution in ESI. Some university systems have several campuses. A few campuses within a particular university system may have been commonly perceived as individual institutions. However, they are indexed in ESI only by the name of the university system. For example, the University of Connecticut system includes the main campus in Storrs and five regional campuses throughout the state. Furthermore, it also contains the Schools of Medicine and Dental Medicine at UConn Health in Farmington. These are all indexed under “University of Connecticut” in ESI.

This ranking system rectified this flaw by manually searching SCI/SSCI and to identify the actual number of articles produced by the individual campuses, as well as the citations of those articles. Likewise, this ranking system employed the same manual searching procedures to ensure that the measurement of each university’s Highly Cited Papers fairly represented the research performance of the individual campuses.”²

¹ In <http://nturanking.csti.tw/> , acedido 7 de setembro de 2021

² In <http://nturanking.csti.tw/methodology/sampleSelection> acedido 7 de setembro de 2021.

“Indicators

The 2021 performance measurements are composed of eight indicators. These indicators together represent three different criteria of scientific paper performance: research productivity, research impact, and research excellence. Table 1 lists the indicators and shows the respective weightings of each indicator.

Table 1 The Criteria and Indicators, and Their Respective Weightings, Used for the NTU World University Performance-Based Ranking

Criteria	2021 NTU World University Performance Indicators	Weighting	
Research Productivity	Number of articles in the last 11 years ^{a,b} (2010-2020)	10%	25%
	Number of articles in the current year ^b (2020)	15%	
Research Impact	Number of citations in the last 11 years ^{a,b} (2010-2020)	15%	35%
	Number of citations in the last 2 years ^b (2019-2020)	10%	
	Average number of citations in the last 11 years ^a (2010-2020)	10%	
Research Excellence	h-index of the last 2 years (2019-2020)	10%	40%
	Number of Highly Cited Papers ^a (2010-2020)	15%	
	Number of articles in high-impact journals in the current year (2019-2020)	15%	

Note: (a)The time frame of the three long-term indicators is consistent with that in ESI, providing cumulative data for the last 11 years.

(b)The indexes used in the calculation of Ref. Ranking.

Indicator Definition

Research Productivity

The number of articles published in peer-reviewed academic journals is frequently used to indicate the productivity of a research institution. To objectively represent a university's current and ongoing research productivity, this ranking system employs two indicators: the number of articles in the last 11 years (2010-2020), and the number of articles in the current year (2020). “Number of articles in the last 11 years” draws data from ESI, which includes 2010-2020 statistics articles published in journals indexed by SCI and SSCI

“Number of articles in the current year” was extracted from the 2020 data obtained from SCI and SSCI, which were released in April 2021. The previous practice was to extract data every January, but after some yearly observations, it is found that papers published in 2020 would continue to be indexed under the databases into early 2021. As a result, it is decided that the time of data extraction should be postponed to April in order to gather a more complete set of data.

Research Impact

The number of citations of a particular academic article within a specific time frame is a commonly accepted indicator of that article's impact. This ranking system considers both the long-term and short-term impact of particular research and seeks to provide a fairer representation of a university's research impact regardless of its size or number of faculty. Thus, this ranking system measures research impact by the number of citations in the last 11 years, the number of citations in the last 2 years, and the average number of citations in the last 11 years.

“Number of citations in the last 11 years” draws 2010-2020 citation statistics from ESI. “Number of citations in the last 2 years” draws 2019-2020 citation statistics from SCI and SSCI in WOS, which include citation statistics updated to the dates of retrieval. “Average number of citations in the last 11 years” is the number of citations in the last 11 years divided by the number of articles in the last 11 years.

Research Excellence

This ranking system assesses each university's research excellence by the following indicators: the h-index of the last 2 years, the number of Highly Cited Papers from ESI, and the number of articles in high-impact journals in the current year. “h-index of the last 2 years” measures both the quantity and quality of a

university's research via the use of the 2019-2020 SCI and SSCI data. Employing Hirsch's (2005) concept of h-index, a university has index h if h of its N_p papers in the last two years have at least h citations each and the other (N_p-h) papers have $\leq h$ citations each.

"Number of Highly Cited Papers" utilizes data from ESI, which includes statistics of "Highly Cited Papers" from 2010 to 2020. ESI defines Highly Cited Papers as SCI/SSCI-indexed papers that are cited most (in the top 1% of the total papers indexed in the same year) within the last 11 years.

"Number of articles in high-impact journals in the current year" employs data from JCR, which supplies the impact factor of each journal in its subject field. The impact factor of a journal is the number of citations of the papers published in that particular journal within the previous two years divided by the number of that journal's papers within the previous two years. A higher impact factor means that the journal has articles that are more frequently cited by other journals, thus suggesting its higher scholarly value. This ranking system defines high-impact journals as those whose impact factors are ranked in the top 5% of the total journals within a specific subject category. With high-impact journal lists derived from JCR, this ranking system is able to count the numbers of each university's articles published in high-impact journals by subject.³

"Calculation Method

This year's data set included 1,417 institutions selected by the Pre-Analysis Institution Screening, with scores calculated by eight indicators. All of the indicators were normalized by using T-score to obtain the finalized score. After year 2020, T-score was calculated by percentage system, then transformed into the finalized score. In the final step, the ranking system calculated the final score of each university by using the indicator weightings and then sorted out the universities by their final scores; for universities with the same scores, they were sorted alphabetically. It should be noted that many universities obtained similar scores, and the slight differences in the final scores must be interpreted carefully. A university with a slightly higher score than another may not necessarily suggest superior performance in scientific research, as the two universities might be in very close proximity in the rankings."⁴

Notas adicionais:

A National Taiwan University não solicita informação às Universidades.

A National Taiwan University no World University Rankings (Overall Ranking) lista os indicadores parcelares apenas para top 500 Universidades. Por razão de empate no *overall score*, poderão ser mais.

Os Rankings by Field e by Subject listam os indicadores parcelares de 300 Universidades. Por razão de empate no *overall score*, poderão ser mais.

³ In <http://nturanking.csti.tw/methodology/indicators> acessado 7 de setembro de 2021.

⁴ In <http://nturanking.csti.tw/methodology/calculationMethod> acessado 7 de setembro de 2021.

2. Evolução⁵ das posições da U.Porto no NTU Ranking

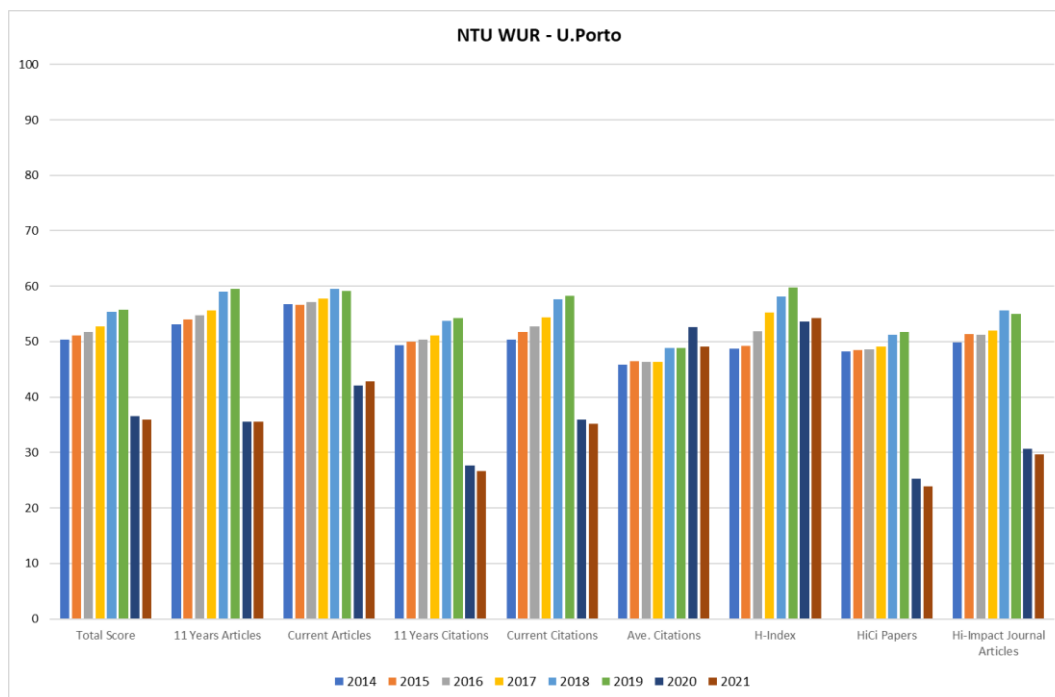
2.1 NTU World University Rankings

	Ranking Mundial	Ranking Europeu	Ranking Ibero-americano	Ranking Nacional
2007	459	195		1
2008	375	161	10	1
2009	332	140	11	1
2010	328	141	9	1
2011	320	141	8	1
2012	318	137	10	1
2013	296	126	10	1
2014	279	120	9	2
2015	269	115	9	2
2016	254	107	8	2
2017	232	93	6	2
2018	218	90	6	2
2019	220	89	6	2
2020	232	91	6	2
2021	223	86	7	2

Scores 2014 a 2021

	2014	2015	2016	2017	2018	2019	2020	2021
World Rank	279	269	254	232	218	220	232	223
Total Score	50,4	51,1	51,7	52,7	55,4	55,7	36,6	35,9
11 Years Articles	53,1	54,0	54,8	55,6	59	59,5	35,6	35,6
Current Articles	56,8	56,6	57,1	57,8	59,5	59,2	42,1	42,9
11 Years Citations	49,3	50,0	50,4	51,1	53,7	54,2	27,6	26,6
Current Citations	50,4	51,8	52,7	54,4	57,6	58,3	35,9	35,2
Ave. Citations	45,8	46,5	46,3	46,4	48,8	48,9	52,6	49,1
H-Index	48,7	49,2	51,9	55,2	58,2	59,8	53,6	54,2
HiCi Papers	48,2	48,5	48,6	49,1	51,3	51,7	25,3	23,9
Hi-Impact Journal Articles	49,8	51,4	51,3	52,0	55,6	55	30,7	29,7
Ref. Rank (normalized by number of full-time faculty)	266	251	239	213	209	199	169	184

⁵ Dados até 2013 retirados de “Evolução das posições da Universidade do Porto nos rankings universitários”, janeiro de 2014 in https://sigarra.up.pt/up/pt/conteudos_service.conteudos_cont?pct_id=20113&pv_cod=55GoHdmanvlg; os dados de 2014, 2015, 2016, 2017, 2018 e 2019 foram retirados de <http://nturanking.lis.ntu.edu.tw> respetivamente em 10 de outubro de 2014, 12 de outubro de 2015, 10 de outubro de 2016, 10 de outubro de 2017, 6 de setembro de 2018 e 17 de junho de 2019. Os dados de 2020 e 2021 foram retirados de <http://nturanking.csti.tw/> respetivamente em 12 e 13 de outubro de 2020 e 7 e 8 de setembro de 2021.



2.2 Rankings by Field

Na edição de 2021, a U.Porto surge em 5 dos 6 Rankings by Field.

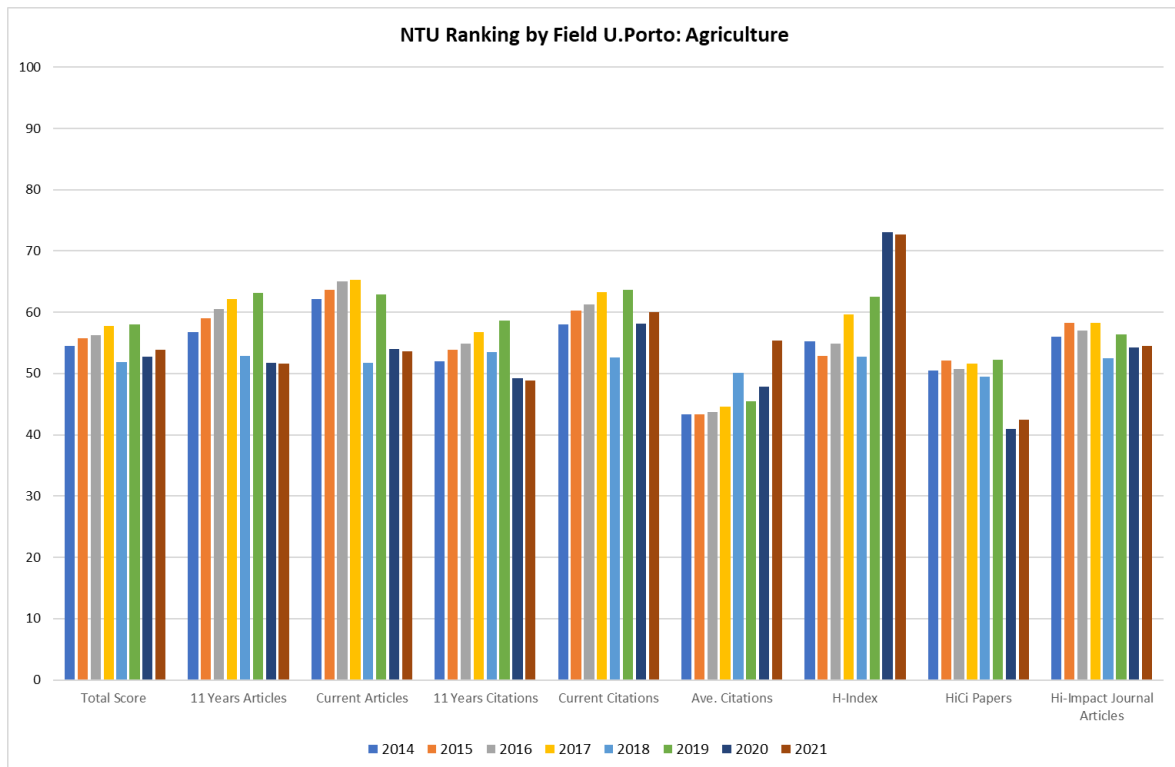
A metodologia dos Rankings by Field é apresentada no **Anexo1**.

		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Agriculture	World	253	199	181	159	147	119	117	106	105	94	86	92	82	73
	Europe	102	72	67	61	56	42	42	35	33	28	25	26	22	19
	Iberoam	n/d	n/d	n/d	n/d	n/d	n/d	n/d	7	7	5	6	5	5	5
	PT	1	1	1	1	1	1	2	2	2	2	2	2	2	2
Medicine	World	--	--	--	--	--	--	--	--	--	--	--	--	--	218
	Europe	--	--	--	--	--	--	--	--	--	--	--	--	--	100
	Iberoam	--	--	--	--	--	--	--	--	--	--	--	--	--	5
	PT	--	--	--	--	--	--	--	--	--	--	--	--	--	1
Engineering	World	--	257	218	165	164	170	156	157	162	164	163	181	174	183
	Europe	--	91	67	46	43	50	38	35	37	35	33	34	30	32
	Iberoam	--	n/d	n/d	n/d	n/d	n/d	n/d	3	5	4	3	4	4	3
	PT	--	3	3	2	1	2	2	2	2	2	2	2	2	2
Life Sciences	World	--	--	283	290	296	262	226	226	229	199	203	188	179	156
	Europe	--	--	118	125	125	110	97	99	101	87	90	82	72	67
	Iberoam	--	--	n/d	n/d	n/d	n/d	n/d	6	6	5	5	5	5	5
	PT	--	--	1	1	1	1	1	1	1	1	1	1	1	1
Natural Sciences	World	--	--	285	226	212	276	281	261	290	266	256	280	293	287
	Europe	--	--	129	100	90	121	124	115	125	108	103	116	126	112
	Iberoam	--	--	n/d	n/d	n/d	n/d	n/d	11	13	11	11	12	11	13
	PT	--	--	2	2	1	2	2	2	2	2	2	2	2	2
Social Sciences	World	--	--	--	--	--	--	--	--	--	--	--	--	--	--

n/d – não disponível -- não consta

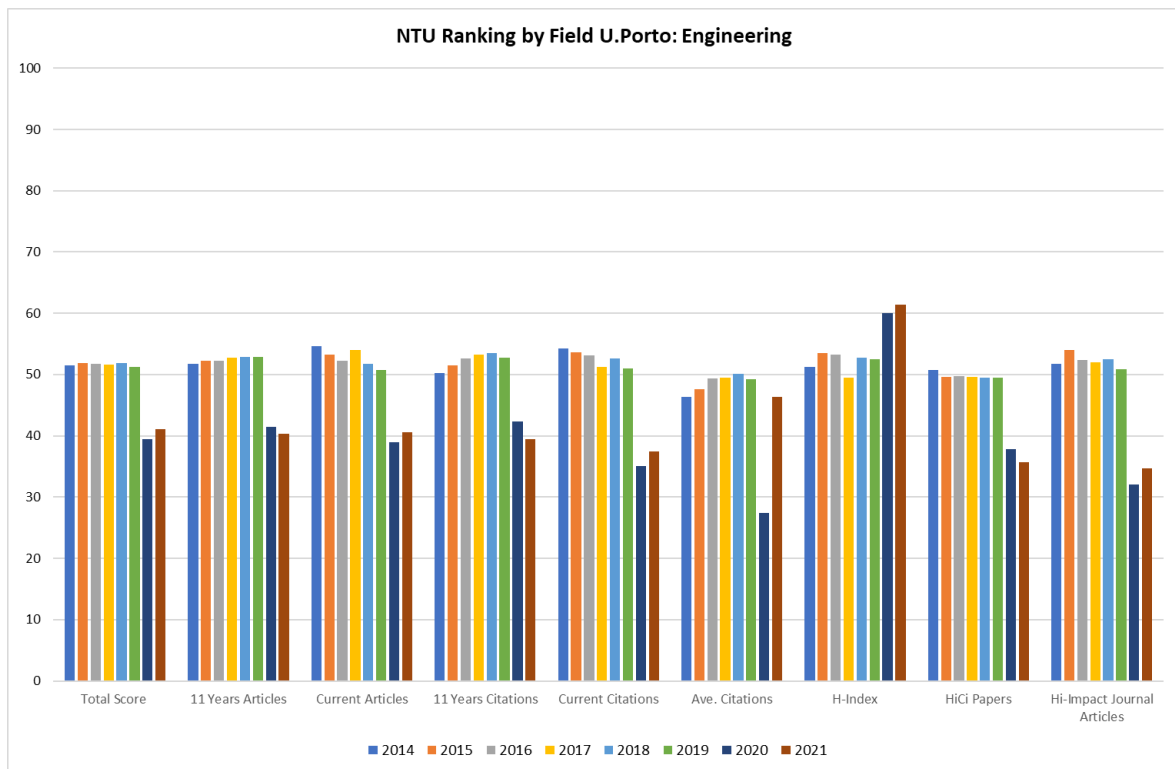
2.2.1 Agriculture

	2014	2015	2016	2017	2018	2019	2020	2021
Total Score	54,5	55,7	56,2	57,8	51,9	58	52,8	53,9
11 Years Articles	56,8	59,0	60,5	62,2	52,9	63,1	51,8	51,6
Current Articles	62,2	63,6	65	65,3	51,8	62,9	54	53,6
11 Years Citations	52,0	53,9	54,9	56,7	53,5	58,6	49,2	48,9
Current Citations	58,0	60,3	61,3	63,3	52,6	63,6	58,2	60
Ave. Citations	43,3	43,3	43,7	44,6	50,1	45,5	47,8	55,4
H-Index	55,2	52,9	54,9	59,7	52,8	62,5	73,1	72,7
HiCi Papers	50,5	52,1	50,7	51,6	49,5	52,3	40,9	42,4
Hi-Impact Journal Articles	56,	58,3	57	58,3	52,5	56,4	54,3	54,5
World Rank	117	106	105	94	86	92	82	73



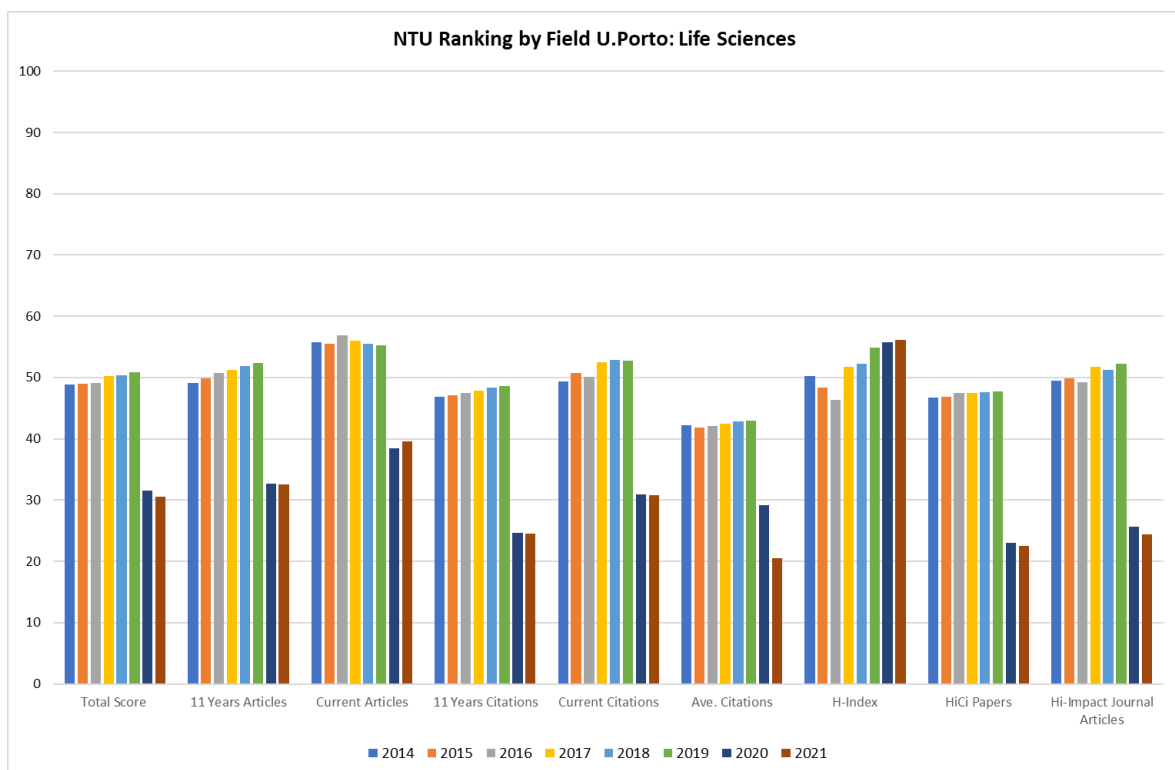
2.2.2 Engineering

	2014	2015	2016	2017	2018	2019	2020	2021
Total Score	51,5	51,9	51,8	51,6	51,9	51,2	39,4	41,1
11 Years Articles	51,8	52,3	52,2	52,7	52,9	52,9	41,5	40,3
Current Articles	54,6	53,2	52,3	54,0	51,8	50,8	39	40,6
11 Years Citations	50,2	51,5	52,6	53,2	53,5	52,8	42,3	39,5
Current Citations	54,3	53,6	53,1	51,3	52,6	51	35	37,4
Ave. Citations	46,4	47,6	49,3	49,5	50,1	49,2	27,4	46,4
H-Index	51,2	53,5	53,2	49,5	52,8	52,5	60	61,4
HiCi Papers	50,7	49,6	49,7	49,6	49,5	49,5	37,8	35,7
Hi-Impact Journal Articles	51,8	54,0	52,4	52,0	52,5	50,9	32	34,7
World Rank	156	157	162	164	163	181	174	183



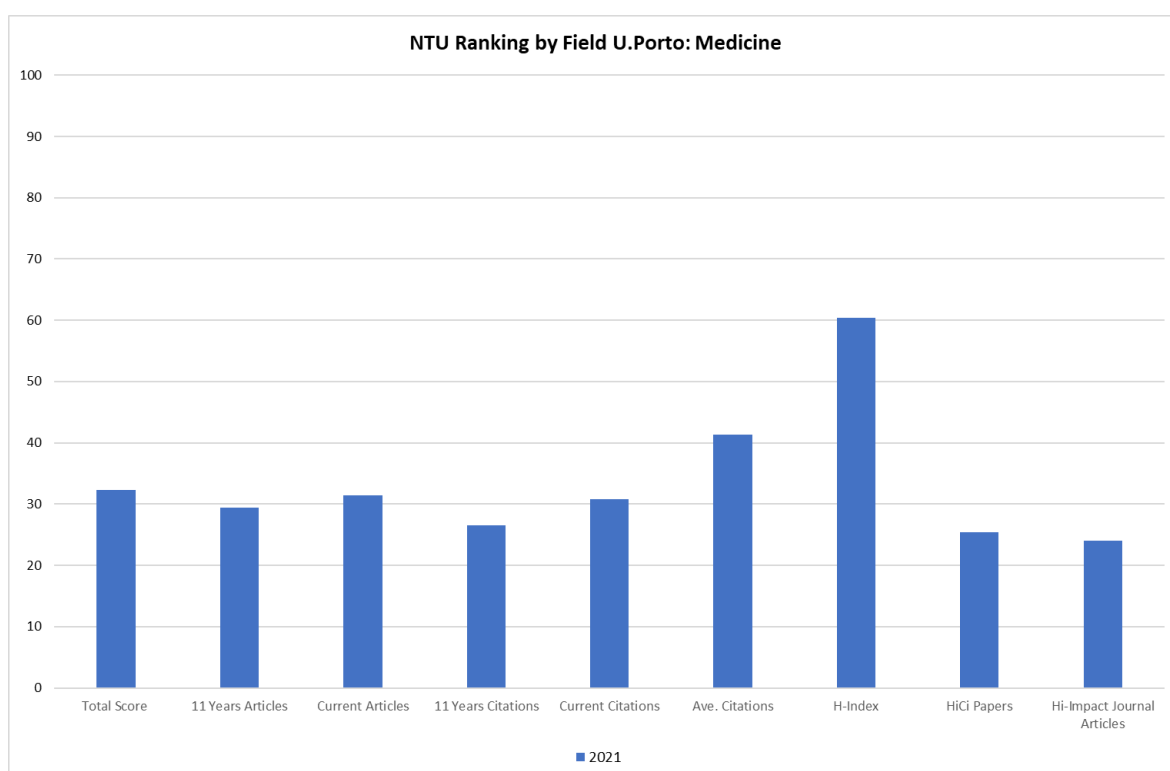
2.2.3 Life Sciences

	2014	2015	2016	2017	2018	2019	2020	2021
Total Score	48,9	49,0	49,1	50,3	50,4	50,9	31,6	30,6
11 Years Articles	49,1	49,8	50,7	51,3	51,9	52,4	32,7	32,5
Current Articles	55,8	55,5	56,9	56,0	55,5	55,2	38,5	39,6
11 Years Citations	46,9	47,1	47,5	47,9	48,3	48,6	24,7	24,5
Current Citations	49,4	50,8	50,1	52,5	52,9	52,7	30,9	30,8
Ave. Citations	42,2	41,8	42,1	42,5	42,8	43	29,2	20,5
H-Index	50,3	48,4	46,3	51,8	52,2	54,9	55,8	56,1
HiCi Papers	46,7	46,9	47,5	47,5	47,6	47,7	23	22,5
Hi-Impact Journal Articles	49,5	49,9	49,2	51,7	51,2	52,3	25,7	24,4
World Rank	226	226	229	199	203	188	179	156



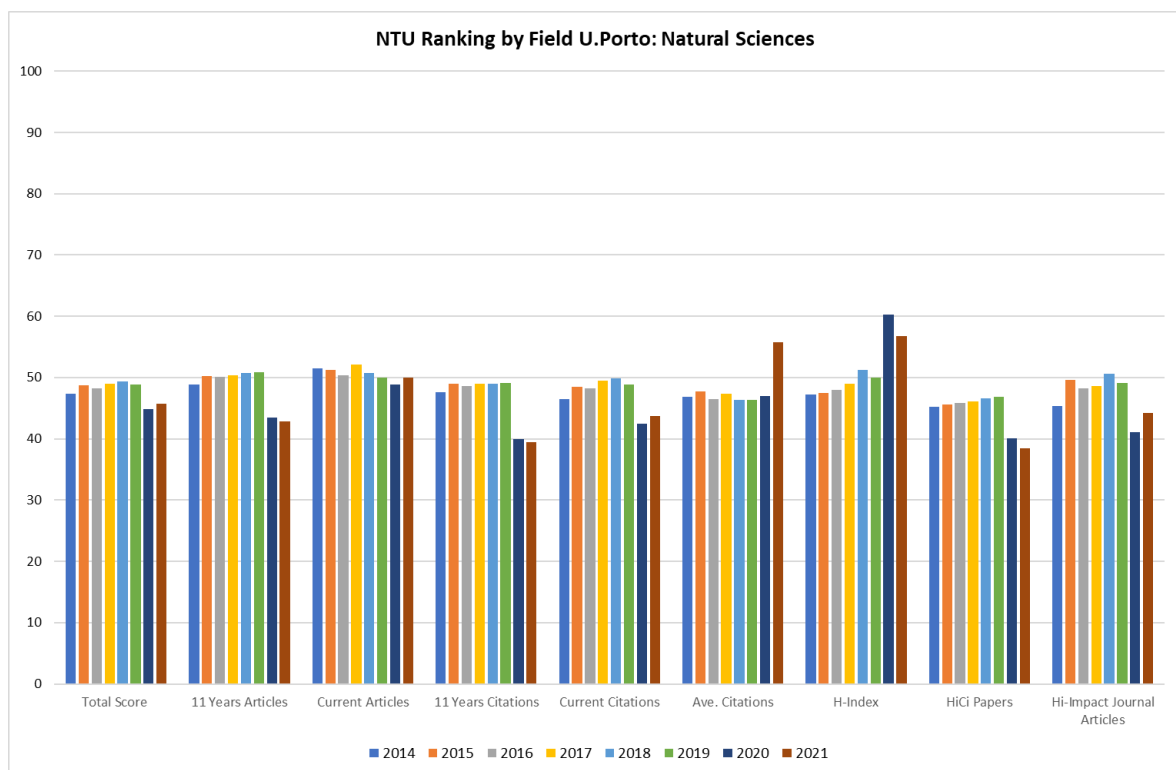
2.2.4 Medicine

	2021
Total Score	32,3
11 Years Articles	29,4
Current Articles	31,4
11 Years Citations	26,5
Current Citations	30,8
Ave. Citations	41,3
H-Index	60,4
HiCi Papers	25,4
Hi-Impact Journal Articles	24
World Rank	218



2.2.5 Natural Sciences

	2014	2015	2016	2017	2018	2019	2020	2021
Total Score	47,4	48,7	48,2	49,0	49,4	48,9	44,8	45,7
11 Years Articles	48,8	50,2	50,1	50,4	50,7	50,9	43,5	42,9
Current Articles	51,5	51,3	50,4	52,1	50,8	50	48,8	50
11 Years Citations	47,6	49,0	48,6	49,0	49	49,1	40	39,4
Current Citations	46,5	48,5	48,2	49,5	49,9	48,9	42,5	43,7
Ave. Citations	46,8	47,7	46,5	47,3	46,4	46,3	47	55,7
H-Index	47,2	47,5	48	49,0	51,3	50	60,3	56,8
HiCi Papers	45,2	45,6	45,8	46,1	46,6	46,8	40,1	38,4
Hi-Impact Journal Articles	45,3	49,6	48,2	48,6	50,6	49,1	41,1	44,2
World Rank	281	261	290	266	256	280	293	287



2.3 Rankings by Subject

Na edição de 2021, a U.Porto surge em 19 dos 27 Rankings by Subject; em 2020 estava listada em 18 dos 24 Rankings by Subject

A metodologia dos Rankings by Subject é apresentada no [Anexo 1](#).

		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Physics	World	243	225	251	--	--	294	--	--	--	--	--	--
	Europe	109	103	114	--	--	137	--	--	--	--	--	--
	Iberoam	n/d	n/d	n/d	--	--	18	--	--	--	--	--	--
	PT	2	2	2	--	--	2	--	--	--	--	--	--
Chemistry	World	242	179	124	150	151	162	172	177	172	193	183	166
	Europe	103	70	37	48	49	54	52	53	50	54	49	36
	Iberoam	n/d	n/d	n/d	n/d	n/d	9	9	9	8	7	8	5
	PT	2	1	1	1	2	2	2	2	2	2	2	1=
Mathematics	World	--	--	--	--	--	--	--	--	--	--	275	--
	Europe	--	--	--	--	--	--	--	--	--	--	123	--
	Iberoam	--	--	--	--	--	--	--	--	--	--	19	--
	PT	--	--	--	--	--	--	--	--	--	--	3	--
Geosciences	World	--	--	--	--	--	--	--	--	--	--	--	--
Electrical Engineering	World	--	--	--	209	209	234	242	221	200	210	191	257
	Europe	--	--	--	62	63	70	74	62	53	59	44	65
	Iberoam	--	--	--	n/d	n/d	11	11	7	6	6	5	7
	PT	--	--	--	2	2	2	2	2	2	2	2	2
Computer Science	World	297	299	215	250	215	209	202	242	211	227	230	244
	Europe	112	117	75	91	65	66	59	78	58	62	63	63
	Iberoam	n/d	n/d	n/d	n/d	n/d	12	11	12	12	11	10	9
	PT	1	2	2	2	2	2	2	3	2	2	2	2
Mechanical Engineering	World	62	47	30	92	65	80	84	73	80	86	78	103
	Europe	17	13	7	28	19	25	23	21	22	23	20	25
	Iberoam	n/d	n/d	n/d	n/d	n/d	2	2	2	2	2	2	4
	PT	1	1	1	1	2	2	2	2	2	2	2	2

		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Chemical Engineering	World	85	58	60	64	69	76	80	82	83	89	92	74
	Europe	20	16	12	13	14	15	16	17	16	17	17	10
	Iberoam	n/d	n/d	n/d	n/d	n/d	3	1	1	2	2	1	1
	PT	1	1	1	1	1	1	1	1	1	1	1	1
Materials Science	World	255	239	291	226	218	195	247	245	228	244	222	247
	Europe	90	80	97	66	62	50	72	65	57	64	48	50
	Iberoam	n/d	n/d	n/d	n/d	n/d	5	7	8	5	7	6	7
	PT	3	3	3	3	3	3	4	4	2	3	4	4
Civil Engineering	World	126	97	67	54	50	59	58	53	53	79	86	139
	Europe	36	25	16	14	13	14	13	10	9	16	14	34
	Iberoam	n/d	n/d	n/d	n/d	n/d	3	2	2	2	3	2	4
	PT	2	1	1	1	2	2	2	2	2	2	2	2
Agricultural Sciences	World	--	66	57	47	69	62	58	57	31	50	45	36
	Europe	--	24	19	15	24	19	18	17	8	14	12	10
	Iberoam	--	n/d	n/d	n/d	n/d	5	6	6	4	6	6	5
	PT	--	1	1	1	1	1	1	1	1	1	1	1
Environment/Ecology	World	--	192	185	163	126	117	125	110	111	118	101	93
	Europe	--	65	61	56	47	43	47	42	43	44	32	32
	Iberoam	--	n/d	n/d	n/d	n/d	6	6	5	5	4	4	4
	PT	--	1	1	1	2	2	2	2	2	2	2	2
Plant & Animal Science	World	--	--	277	196	160	138	125	127	134	115	96	83
	Europe	--	--	127	86	68	57	50	52	56	46	32	26
	Iberoam	--	--	n/d	n/d	n/d	11	10	10	11	9	8	8
	PT	--	--	2	1	2	2	2	2	2	2	2	2
Pharmacology &Toxicology	World	--	--	206	149	87	99	65	58	67	74	50	40
	Europe	--	--	79	54	32	38	23	20	22	24	12	9
	Iberoam	--	--	n/d	n/d	n/d	3	3	3	3	2	3	2
	PT	--	--	1	1	1	1	1	1	1	1	1	1

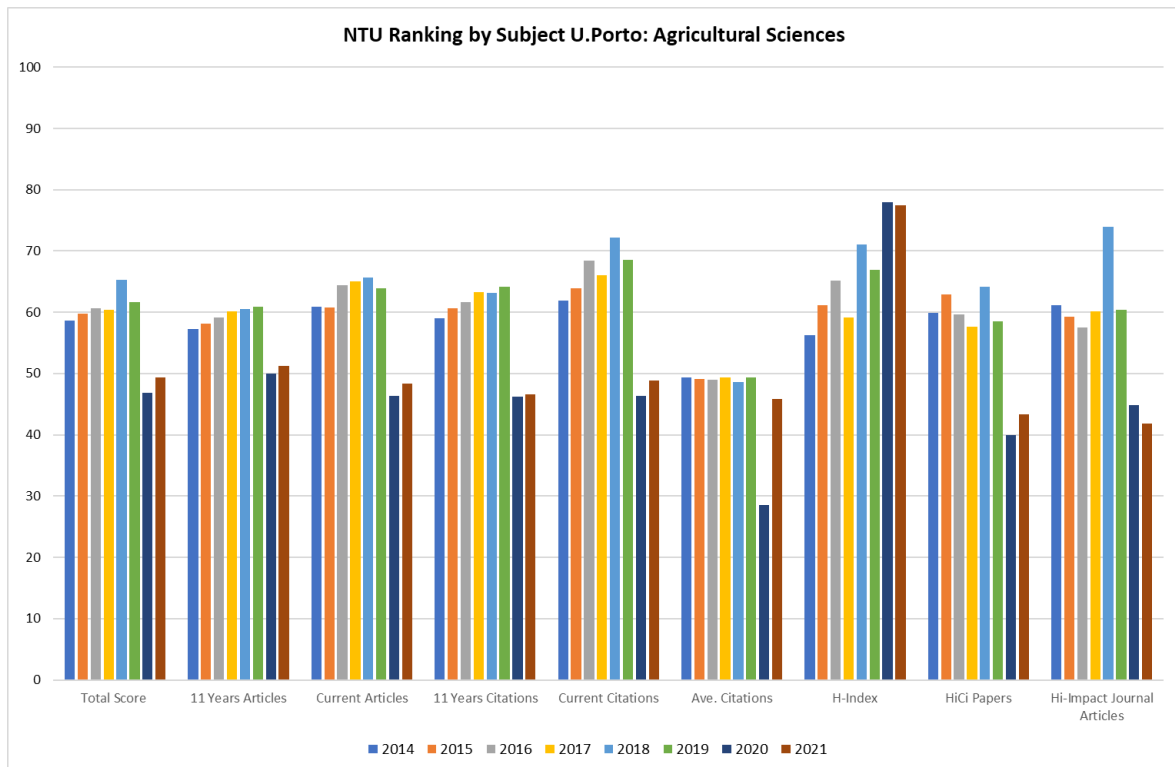
		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Biology & Biochemistry (novo2019)	World										165	179	160
	Europe										66	68	66
	Iberoam										4	5	4
	PT										1	1	1
Clinical Medicine (novo2019)	World										241	224	204
	Europe										111	100	87
	Iberoam										6	5	5
	PT										1	1	1
Economics & Business (novo 2019)	World										--	--	--
Immunology (novo2019)	World										192	179	195
	Europe										82	81	85
	Iberoam										8	7	7
	PT										1	1	1
Microbiology (novo2019)	World										179	174	167
	Europe										64	60	56
	Iberoam										6	7	7
	PT										1	2	1
Molecular Biology & Genetics (novo2019)	World										198	169	158
	Europe										85	67	64
	Iberoam										4	4	5
	PT										1	1	1
Neuroscience & Behavior (novo 2019)	World										--	--	--
Psychiatry / Psychology (novo 2019)	World										--	--	--
Social Science (novo 2019)	World										--	--	--
Space Science (novo2019)	World										159	187	183
	Europe										81	97	92
	Iberoam										12	14	14
	PT										2	2	2

		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Biomedical Engineering (novo 2021)	World												--
Energy Science & Engineering (novo 2021)	World												150
	Europe												34
	Iberoam												4
	PT												2
Environmental Science & Engineering (novo 2021)	World												96
	Europe												24
	Iberoam												3
	PT												2

n/d – não disponível -- não consta

2.3.1 Agricultural Sciences

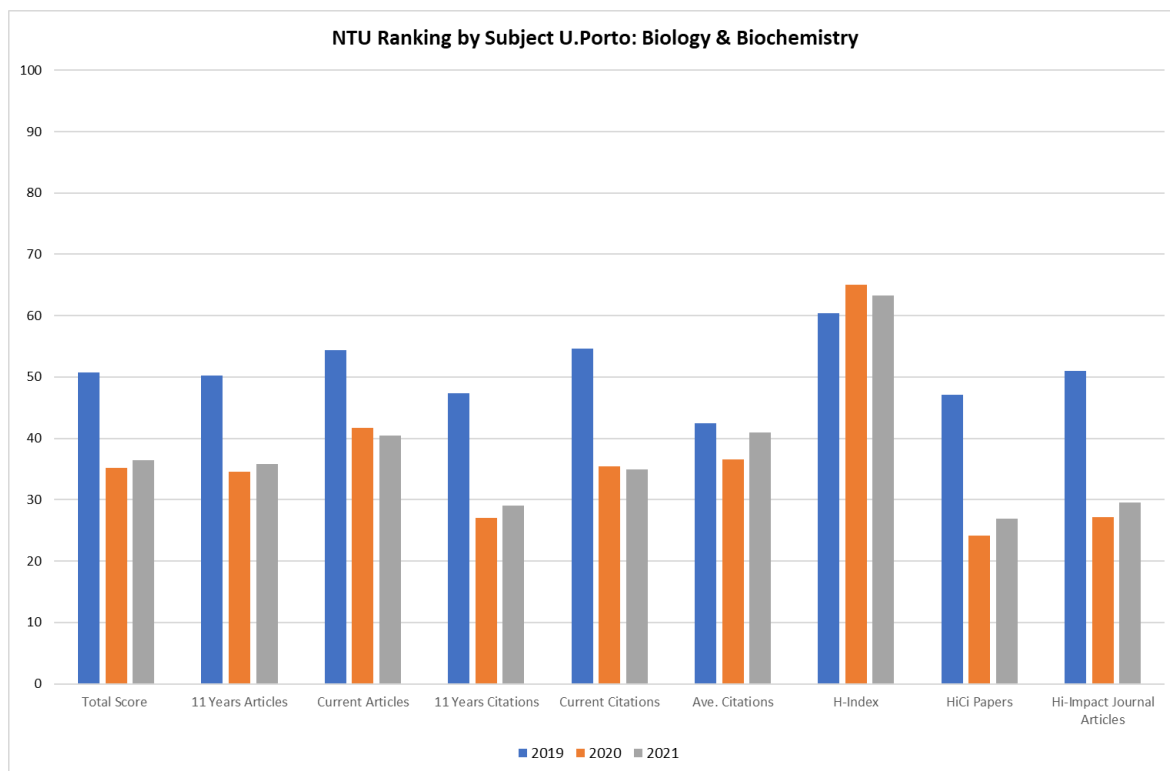
	2014	2015	2016	2017	2018	2019	2020	2021
Total Score	58,6	59,8	60,7	60,4	65,3	61,6	46,9	49,4
11 Years Articles	57,3	58,2	59,1	60,2	60,5	60,9	50	51,2
Current Articles	60,9	60,8	64,4	65,1	65,7	63,9	46,3	48,4
11 Years Citations	59,0	60,6	61,7	63,3	63,1	64,2	46,2	46,6
Current Citations	61,9	63,9	68,4	66,1	72,2	68,5	46,4	48,8
Ave. Citations	49,4	49,1	49	49,3	48,6	49,4	28,6	45,9
H-Index	56,3	61,1	65,2	59,2	71	66,9	78	77,4
HiCi Papers	59,9	62,9	59,7	57,7	64,2	58,5	39,9	43,4
Hi-Impact Journal Articles	61,1	59,3	57,5	60,1	73,9	60,4	44,9	41,8
World Rank	69	62	58	57	31	50	45	36



2.3.2 Biology & Biochemistry

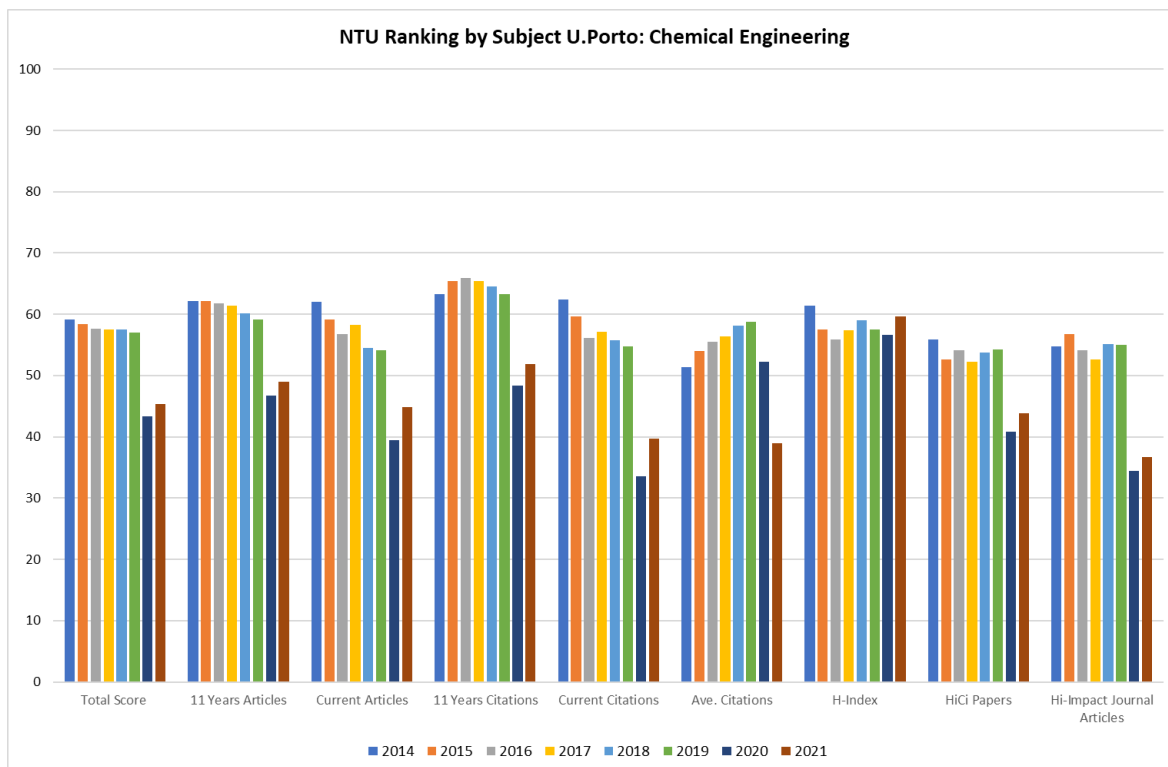
Nova área em 2019

	2019	2020	2021
Total Score	50,7	35,2	36,4
11 Years Articles	50,2	34,6	35,8
Current Articles	54,4	41,7	40,5
11 Years Citations	47,3	27	29
Current Citations	54,6	35,4	34,9
Ave. Citations	42,4	36,6	40,9
H-Index	60,4	65	63,3
HiCi Papers	47,1	24,2	26,9
Hi-Impact Journal Articles	51	27,2	29,5
World Rank	165	179	160



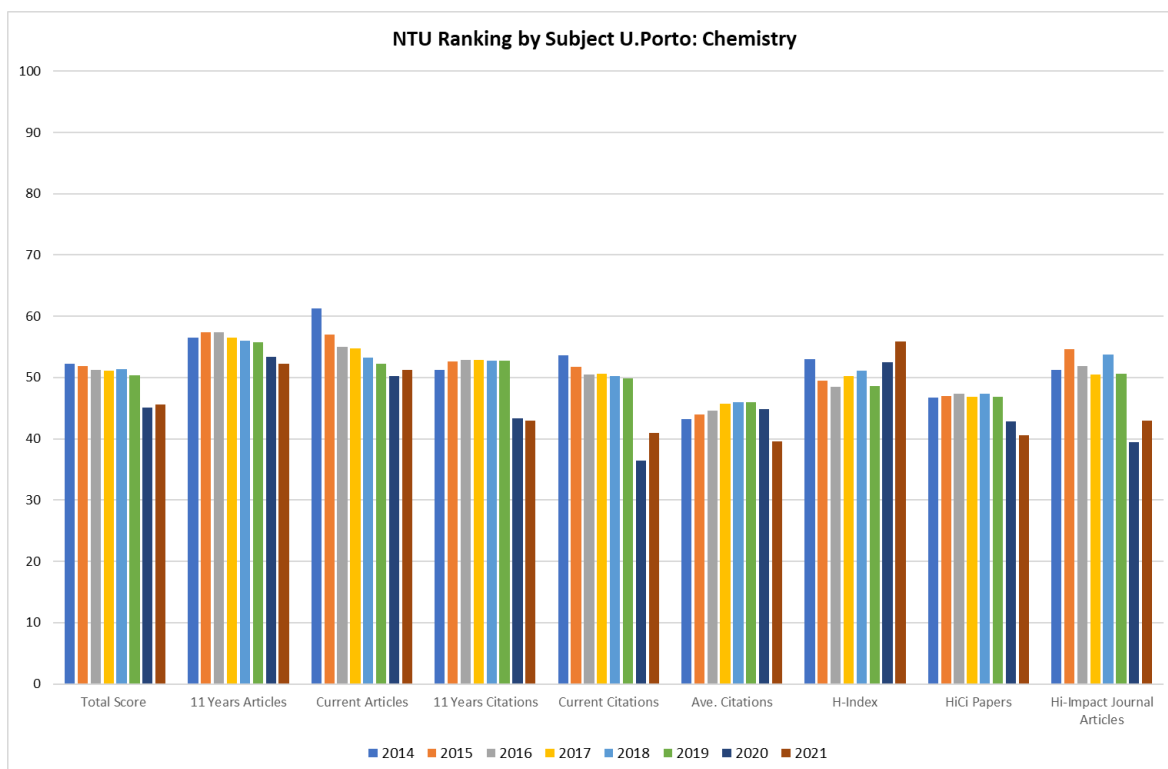
2.3.3 Chemical Engineering

	2014	2015	2016	2017	2018	2019	2020	2021
Total Score	59,1	58,4	57,6	57,5	57,5	57	43,3	45,3
11 Years Articles	62,1	62,2	61,8	61,4	60,2	59,1	46,7	49
Current Articles	62,0	59,1	56,8	58,3	54,5	54,1	39,4	44,9
11 Years Citations	63,3	65,4	65,9	65,4	64,6	63,3	48,3	51,9
Current Citations	62,4	59,7	56,1	57,1	55,8	54,8	33,5	39,7
Ave. Citations	51,4	54,0	55,5	56,4	58,2	58,8	52,2	38,9
H-Index	61,4	57,5	55,9	57,4	59	57,5	56,6	59,7
HiCi Papers	55,9	52,6	54,1	52,3	53,8	54,2	40,8	43,9
Hi-Impact Journal Articles	54,7	56,7	54,1	52,6	55,1	55	34,4	36,7
World Rank	69	76	80	82	83	89	92	74



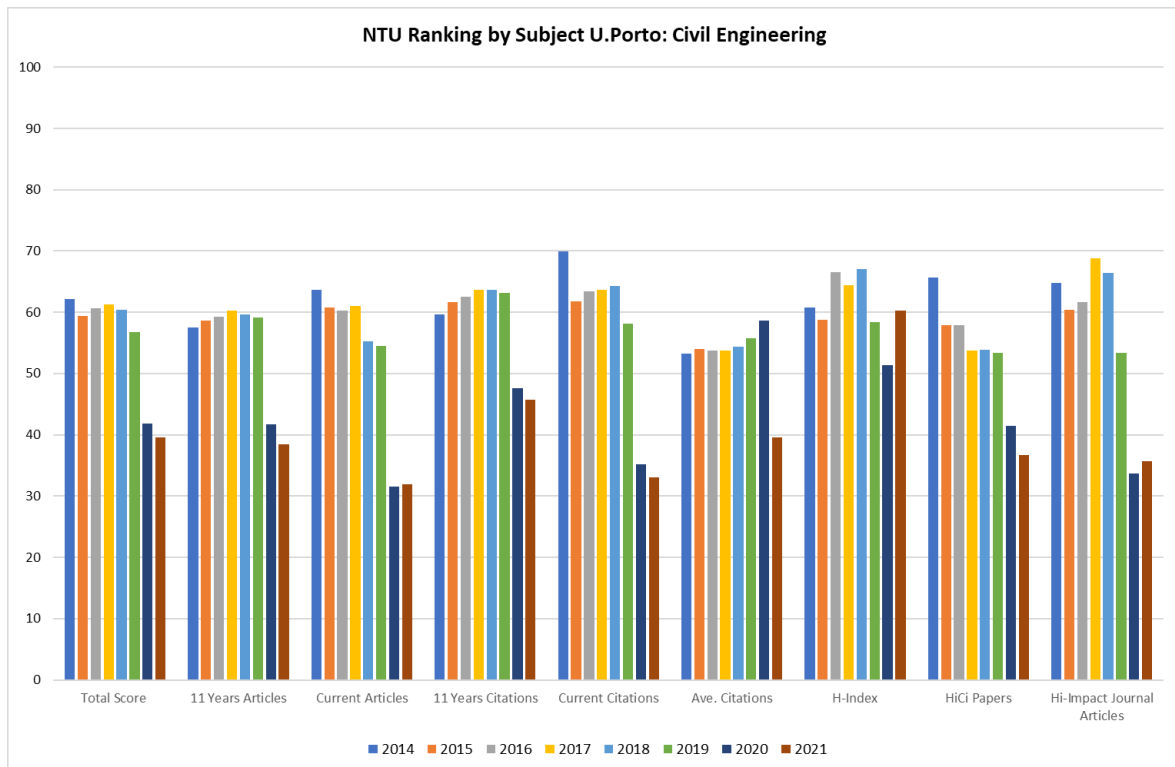
2.3.4 Chemistry

	2014	2015	2016	2017	2018	2019	2020	2021
Total Score	52,2	51,9	51,2	51,1	51,4	50,4	45,1	45,6
11 Years Articles	56,5	57,4	57,4	56,5	56	55,8	53,4	52,3
Current Articles	61,3	57	55	54,7	53,3	52,2	50,2	51,3
11 Years Citations	51,2	52,6	52,9	52,9	52,8	52,8	43,3	43
Current Citations	53,6	51,8	50,5	50,6	50,3	49,8	36,5	41
Ave. Citations	43,2	44	44,6	45,7	46	46	44,8	39,6
H-Index	53	49,5	48,5	50,3	51,1	48,6	52,5	55,9
HiCi Papers	46,7	47	47,3	46,9	47,4	46,8	42,9	40,6
Hi-Impact Journal Articles	51,3	54,6	51,9	50,5	53,7	50,6	39,5	43
World Rank	151	162	172	177	172	193	183	166



2.3.5 Civil Engineering

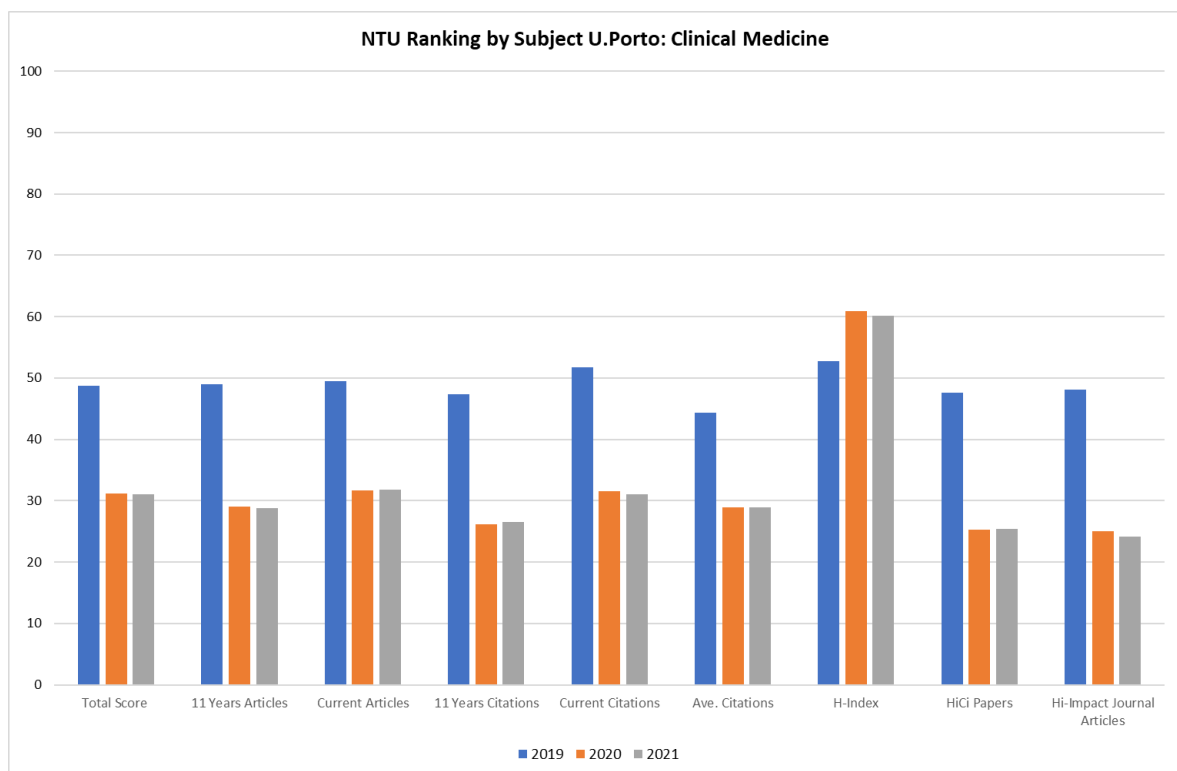
	2014	2015	2016	2017	2018	2019	2020	2021
Total Score	62,2	59,4	60,7	61,3	60,4	56,8	41,8	39,6
11 Years Articles	57,5	58,6	59,3	60,3	59,7	59,2	41,7	38,4
Current Articles	63,6	60,8	60,3	61,0	55,2	54,5	31,5	31,9
11 Years Citations	59,7	61,7	62,5	63,6	63,7	63,1	47,6	45,7
Current Citations	69,9	61,8	63,4	63,7	64,3	58,1	35,2	33,1
Ave. Citations	53,2	54,0	53,8	53,7	54,4	55,7	58,7	39,6
H-Index	60,8	58,8	66,6	64,4	67	58,4	51,4	60,3
HiCi Papers	65,7	57,9	57,9	53,7	53,9	53,4	41,5	36,7
Hi-Impact Journal Articles	64,8	60,4	61,6	68,8	66,4	53,4	33,7	35,7
World Rank	50	59	58	53	53	79	86	139



2.3.6 Clinical Medicine

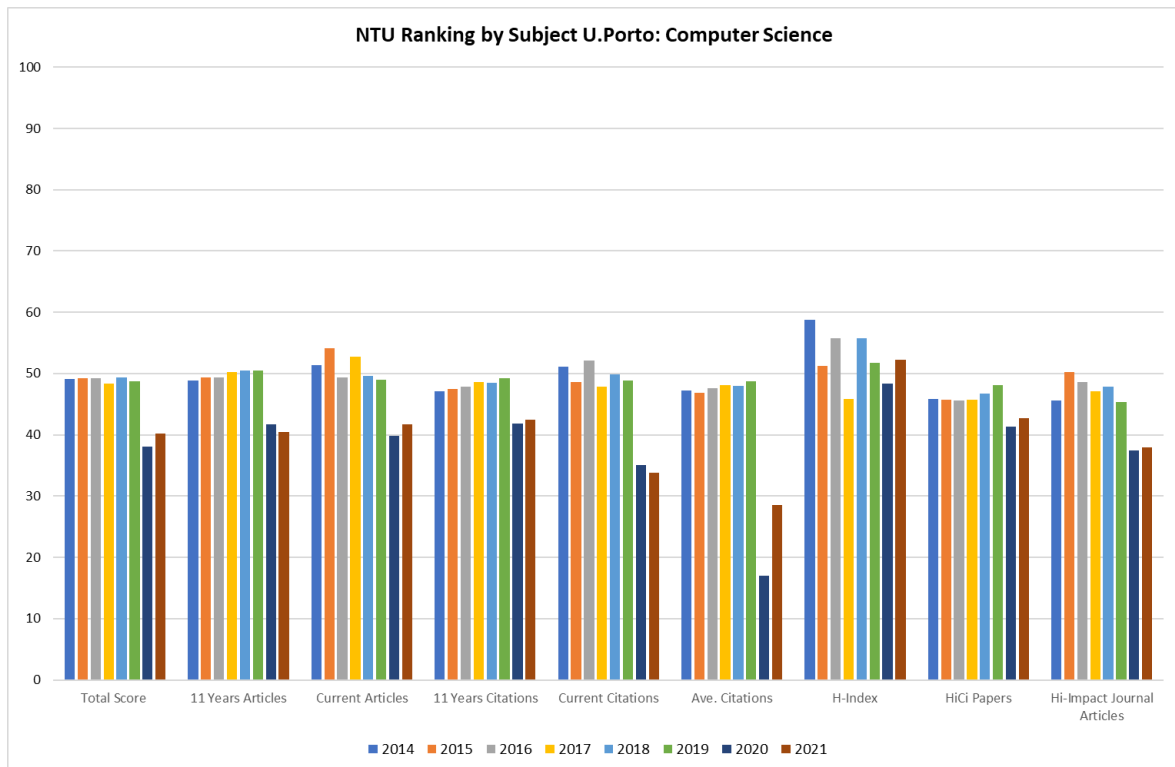
Nova área em 2019

	2019	2020	2021
Total Score	48,7	31,2	31,1
11 Years Articles	49	29	28,8
Current Articles	49,5	31,7	31,8
11 Years Citations	47,3	26,1	26,5
Current Citations	51,7	31,5	31,1
Ave. Citations	44,3	28,9	28,9
H-Index	52,8	60,9	60,1
HiCi Papers	47,6	25,3	25,4
Hi-Impact Journal Articles	48,1	25	24,1
World Rank	241	224	204



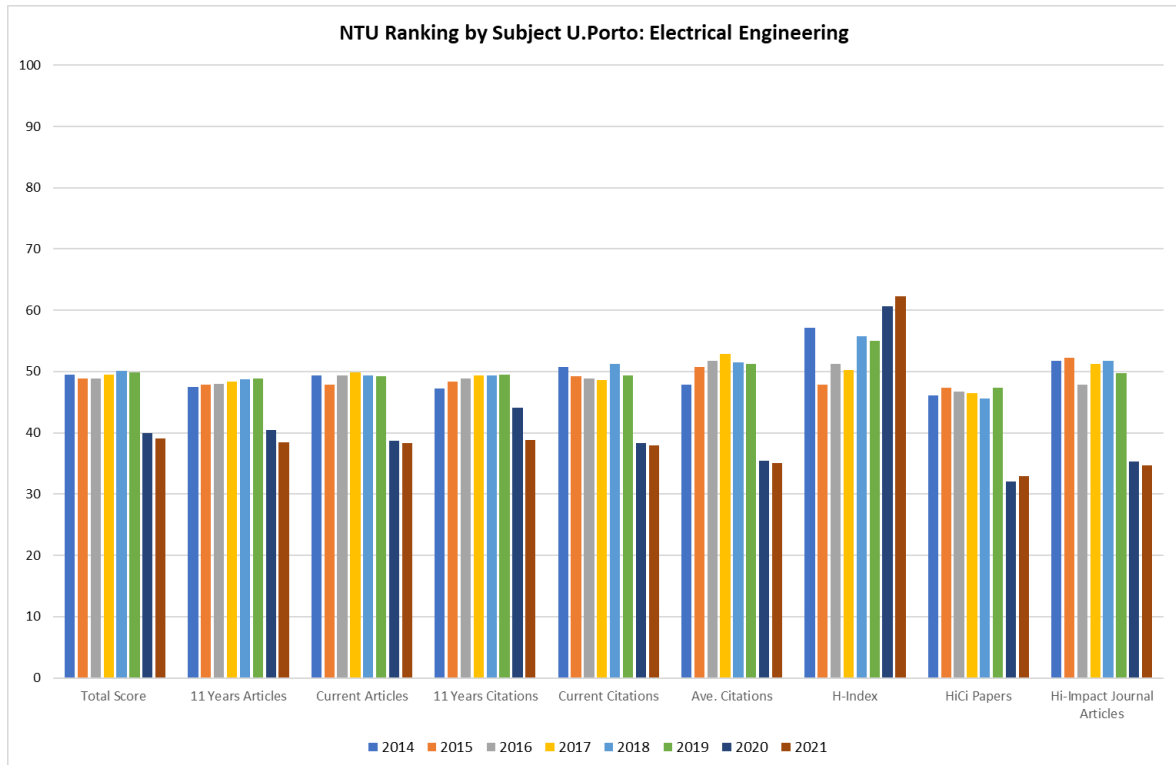
2.3.7 Computer Science

	2014	2015	2016	2017	2018	2019	2020	2021
Total Score	49,1	49,2	49,2	48,3	49,3	48,7	38,1	40,2
11 Years Articles	48,9	49,3	49,4	50,2	50,5	50,5	41,7	40,5
Current Articles	51,4	54,1	49,3	52,7	49,6	49	39,8	41,7
11 Years Citations	47,1	47,5	47,9	48,6	48,5	49,2	41,8	42,4
Current Citations	51,1	48,6	52,1	47,8	49,8	48,8	35,1	33,8
Ave. Citations	47,2	46,9	47,6	48,1	48	48,7	17	28,6
H-Index	58,8	51,2	55,8	45,8	55,8	51,7	48,4	52,3
HiCi Papers	45,9	45,7	45,6	45,7	46,7	48,1	41,3	42,7
Hi-Impact Journal Articles	45,6	50,3	48,6	47,1	47,8	45,3	37,4	38
World Rank	215	209	202	242	211	227	230	244



2.3.8 Electrical Engineering

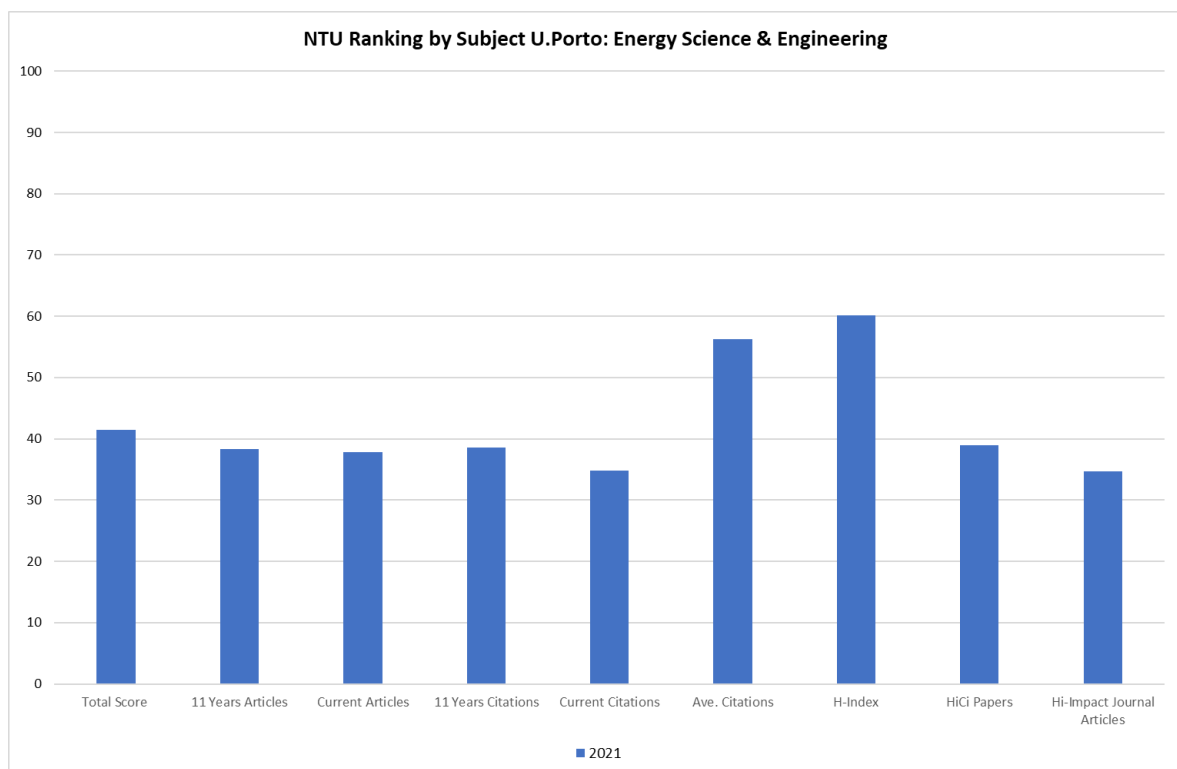
	2014	2015	2016	2017	2018	2019	2020	2021
Total Score	49,5	48,9	48,9	49,5	50,1	49,8	40	39,1
11 Years Articles	47,5	47,8	48	48,3	48,7	48,9	40,5	38,4
Current Articles	49,4	47,9	49,3	49,8	49,4	49,2	38,7	38,3
11 Years Citations	47,2	48,3	48,8	49,4	49,4	49,5	44,1	38,8
Current Citations	50,8	49,2	48,8	48,6	51,2	49,4	38,3	38
Ave. Citations	47,8	50,8	51,7	52,9	51,5	51,2	35,4	35,1
H-Index	57,1	47,8	51,3	50,2	55,7	55	60,6	62,3
HiCi Papers	46,1	47,3	46,7	46,5	45,6	47,4	32,1	32,9
Hi-Impact Journal Articles	51,7	52,3	47,9	51,3	51,7	49,7	35,3	34,7
World Rank	209	234	242	221	200	210	191	257



2.3.9 Energy Science & Engineering

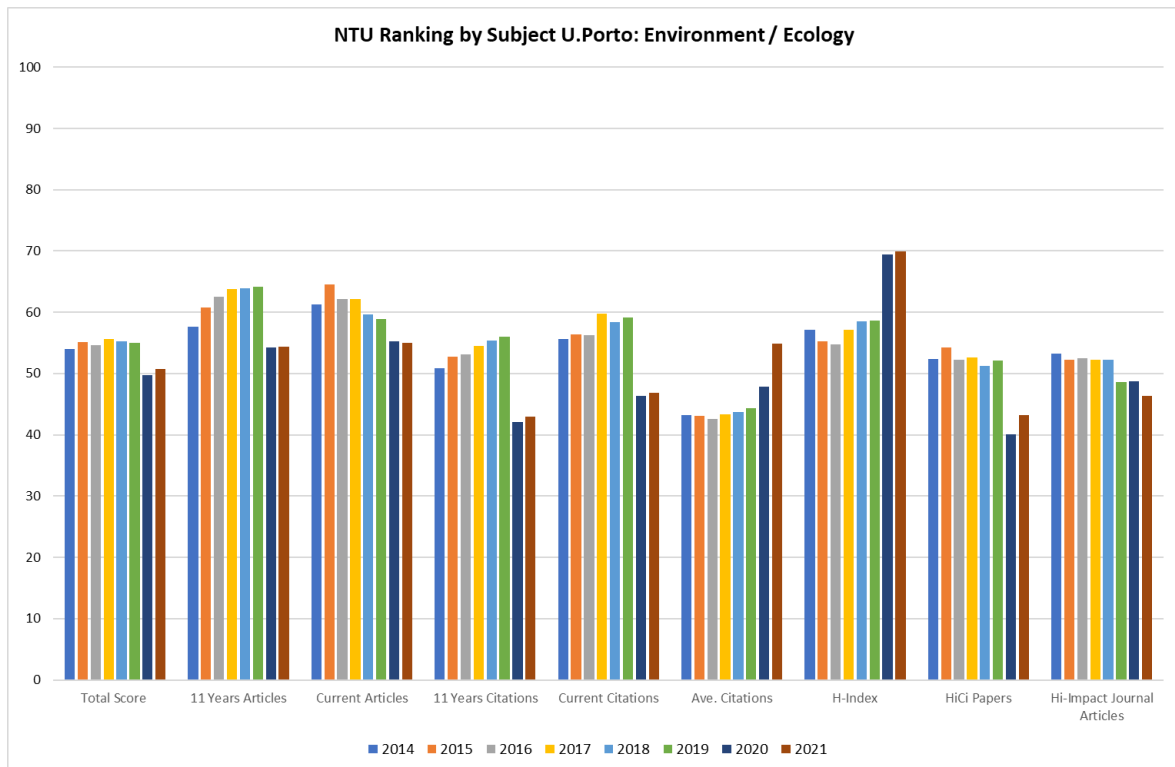
Nova área em 2021

	2021
Total Score	41,5
11 Years Articles	38,3
Current Articles	37,8
11 Years Citations	38,6
Current Citations	34,8
Ave. Citations	56,3
H-Index	60,2
HiCi Papers	39
Hi-Impact Journal Articles	34,7
World Rank	150



2.3.10 Environment / Ecology

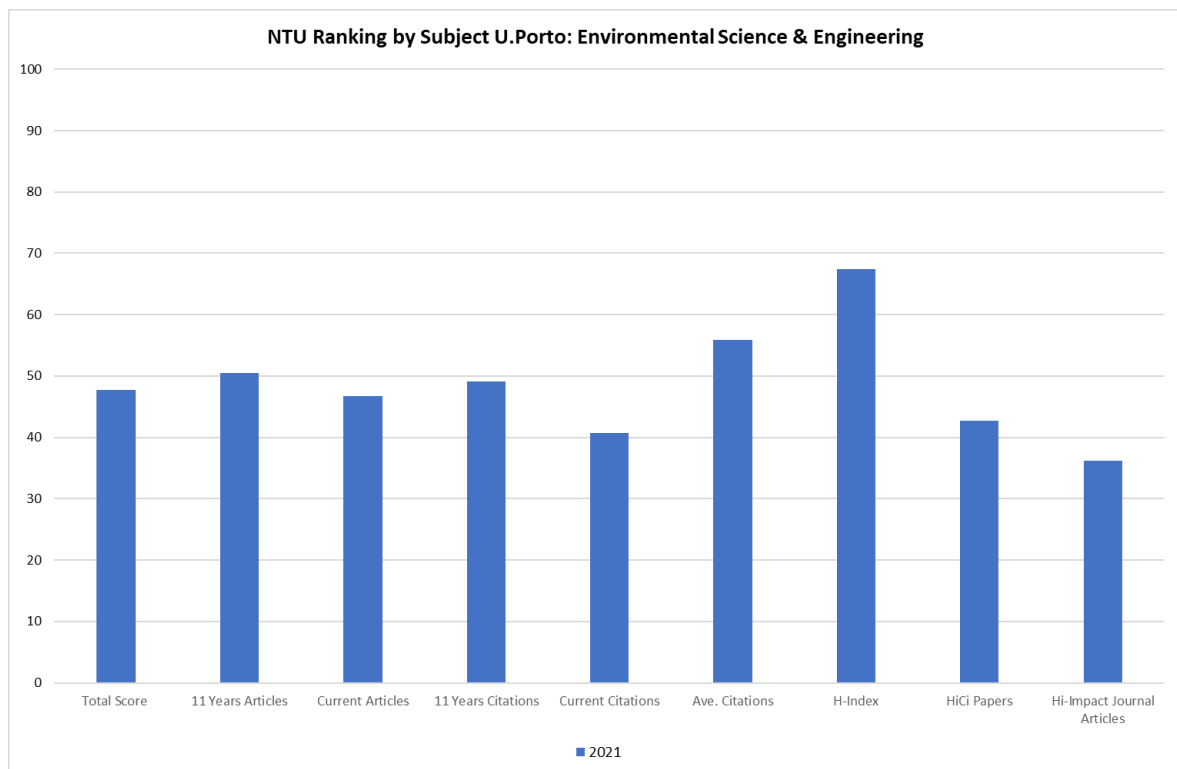
	2014	2015	2016	2017	2018	2019	2020	2021
Total Score	54,0	55,1	54,6	55,6	55,2	55	49,7	50,7
11 Years Articles	57,7	60,8	62,5	63,8	63,9	64,1	54,2	54,4
Current Articles	61,3	64,5	62,1	62,2	59,7	58,9	55,3	55
11 Years Citations	50,9	52,8	53,1	54,5	55,4	56	42,1	43
Current Citations	55,6	56,4	56,3	59,8	58,4	59,2	46,4	46,8
Ave. Citations	43,2	43,1	42,6	43,3	43,7	44,3	47,8	54,9
H-Index	57,1	55,2	54,7	57,1	58,5	58,6	69,4	69,9
HiCi Papers	52,4	54,3	52,2	52,6	51,2	52,1	40,1	43,2
Hi-Impact Journal Articles	53,3	52,3	52,5	52,2	52,3	48,6	48,7	46,3
World Rank	126	117	125	110	111	118	101	93



2.3.11 Environmental Science & Engineering

Nova área em 2021

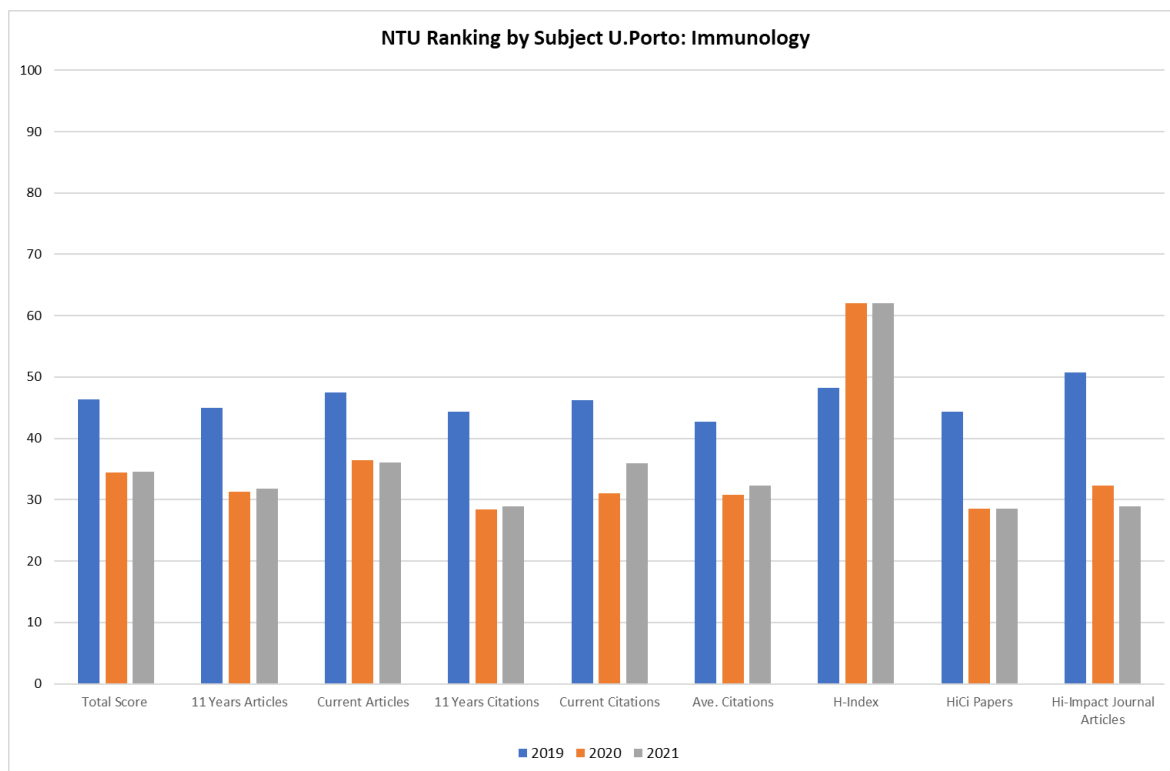
	2021
Total Score	47,7
11 Years Articles	50,5
Current Articles	46,7
11 Years Citations	49,1
Current Citations	40,7
Ave. Citations	55,9
H-Index	67,4
HiCi Papers	42,7
Hi-Impact Journal Articles	36,2
World Rank	96



2.3.12 Immunology

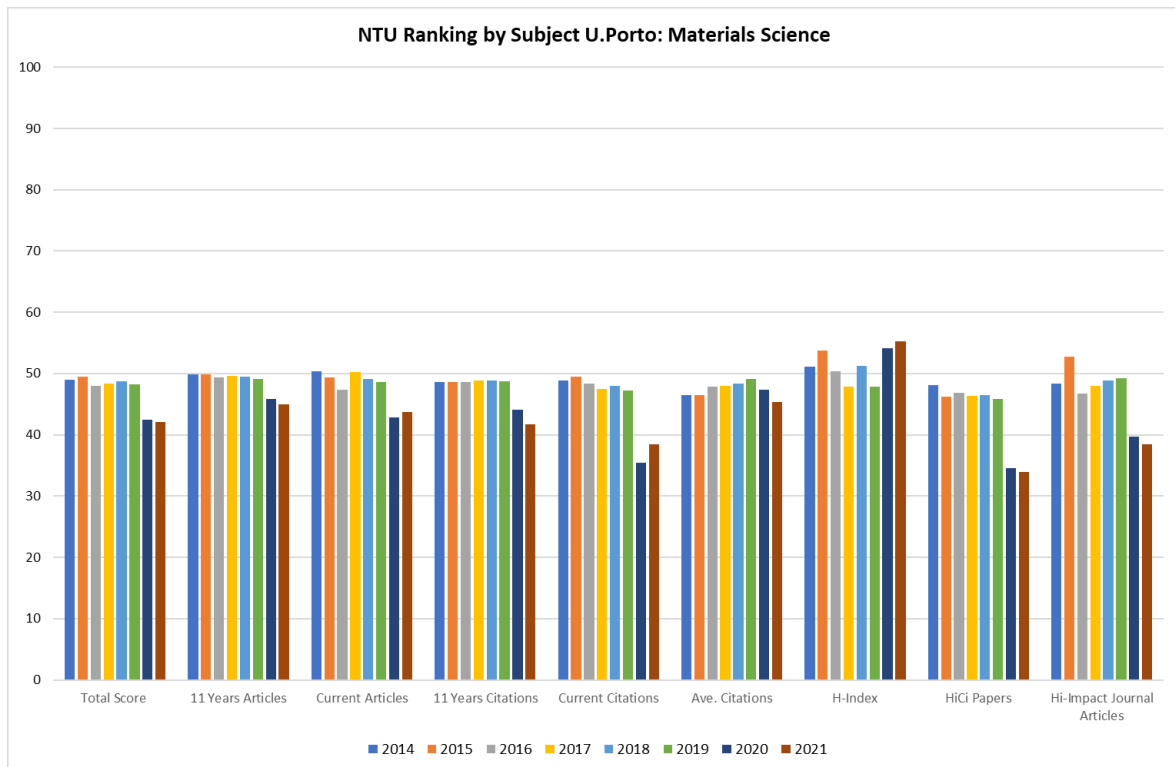
Nova área em 2019

	2019	2020	2021
Total Score	46,3	34,4	34,6
11 Years Articles	45	31,3	31,8
Current Articles	47,5	36,5	36,1
11 Years Citations	44,4	28,4	28,9
Current Citations	46,2	31,1	35,9
Ave. Citations	42,7	30,8	32,3
H-Index	48,2	62	62
HiCi Papers	44,3	28,5	28,5
Hi-Impact Journal Articles	50,8	32,3	28,9
World Rank	192	179	195



2.3.13 Materials Science

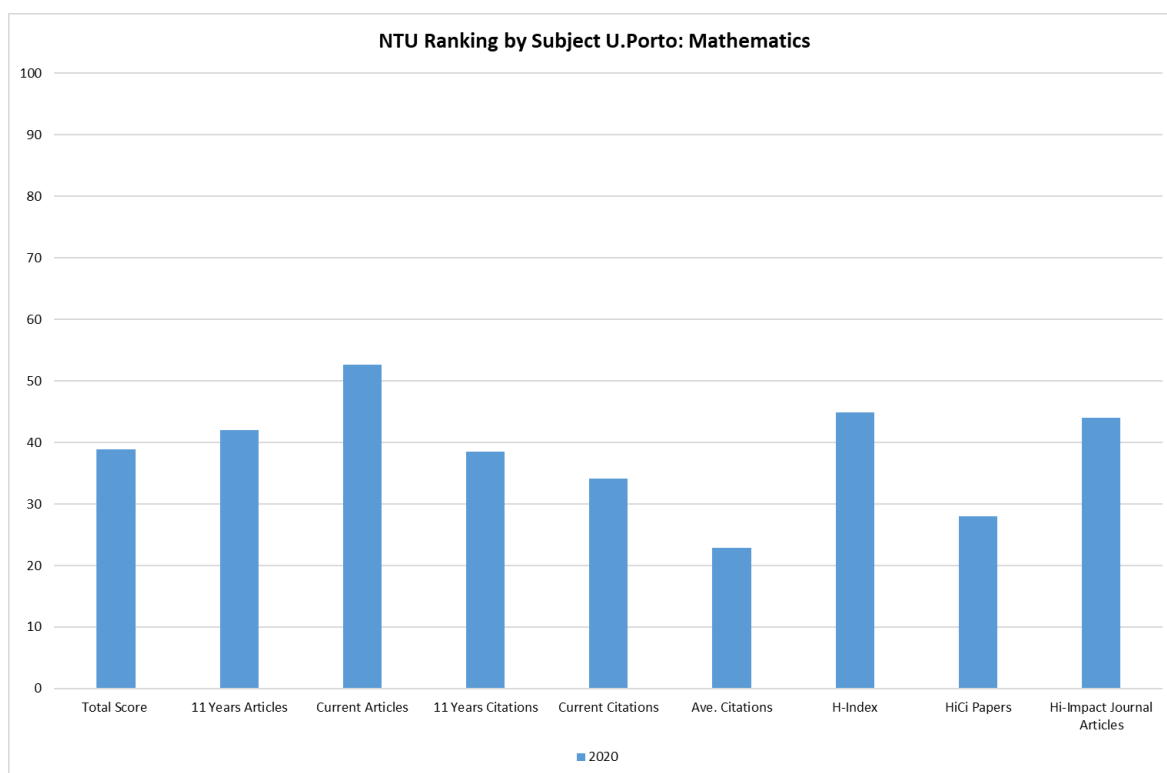
	2014	2015	2016	2017	2018	2019	2020	2021
Total Score	49,0	49,5	48	48,3	48,7	48,2	42,5	42,1
11 Years Articles	49,9	49,9	49,3	49,6	49,5	49,1	45,8	45
Current Articles	50,4	49,4	47,4	50,3	49,1	48,6	42,8	43,7
11 Years Citations	48,6	48,6	48,6	48,9	48,9	48,7	44,1	41,7
Current Citations	48,9	49,5	48,3	47,5	48	47,2	35,5	38,4
Ave. Citations	46,5	46,5	47,8	48,0	48,3	49,1	47,4	45,3
H-Index	51,1	53,7	50,4	47,9	51,3	47,9	54,1	55,2
HiCi Papers	48,1	46,2	46,8	46,3	46,5	45,8	34,6	33,9
Hi-Impact Journal Articles	48,4	52,7	46,7	48,0	48,8	49,2	39,7	38,5
World Rank	218	195	247	245	228	244	222	247



2.3.14 Mathematics

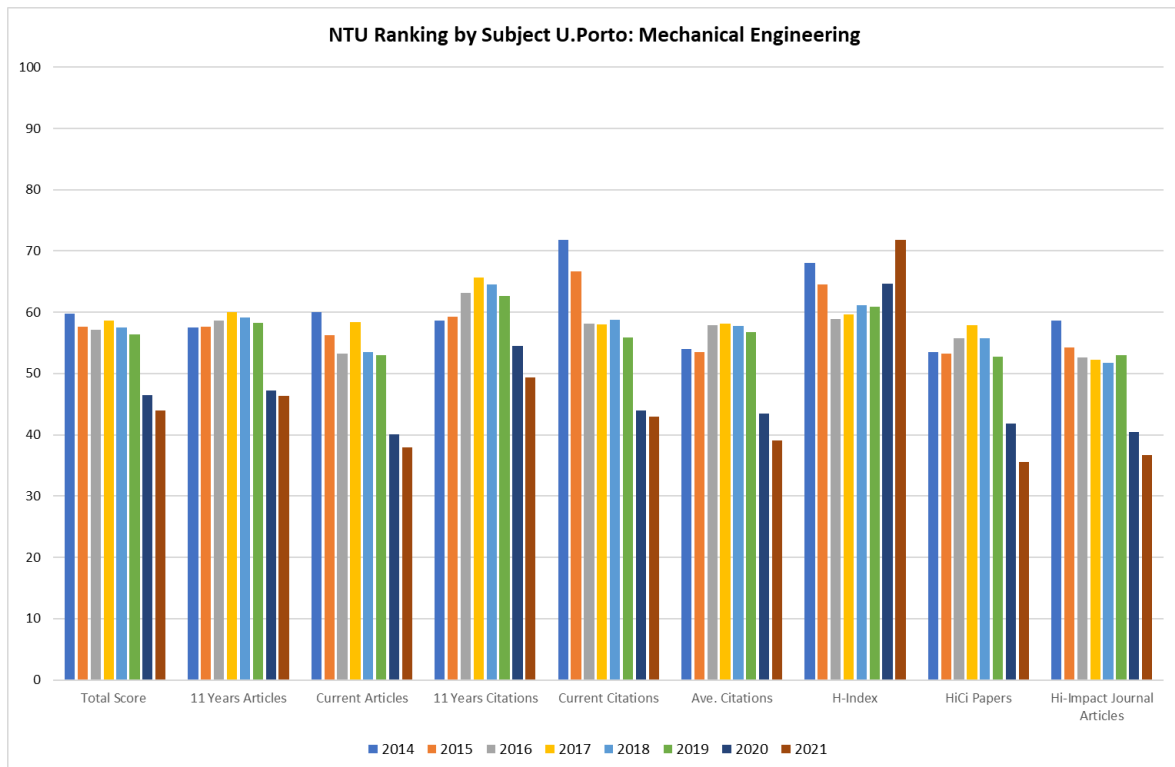
A U.Porto apenas esteve na lista de Matemática apenas em 2020.

	2020
Total Score	38,9
11 Years Articles	42
Current Articles	52,6
11 Years Citations	38,5
Current Citations	34,1
Ave. Citations	22,9
H-Index	44,9
HiCi Papers	28
Hi-Impact Journal Articles	44
World Rank	275



2.3.15 Mechanical Engineering

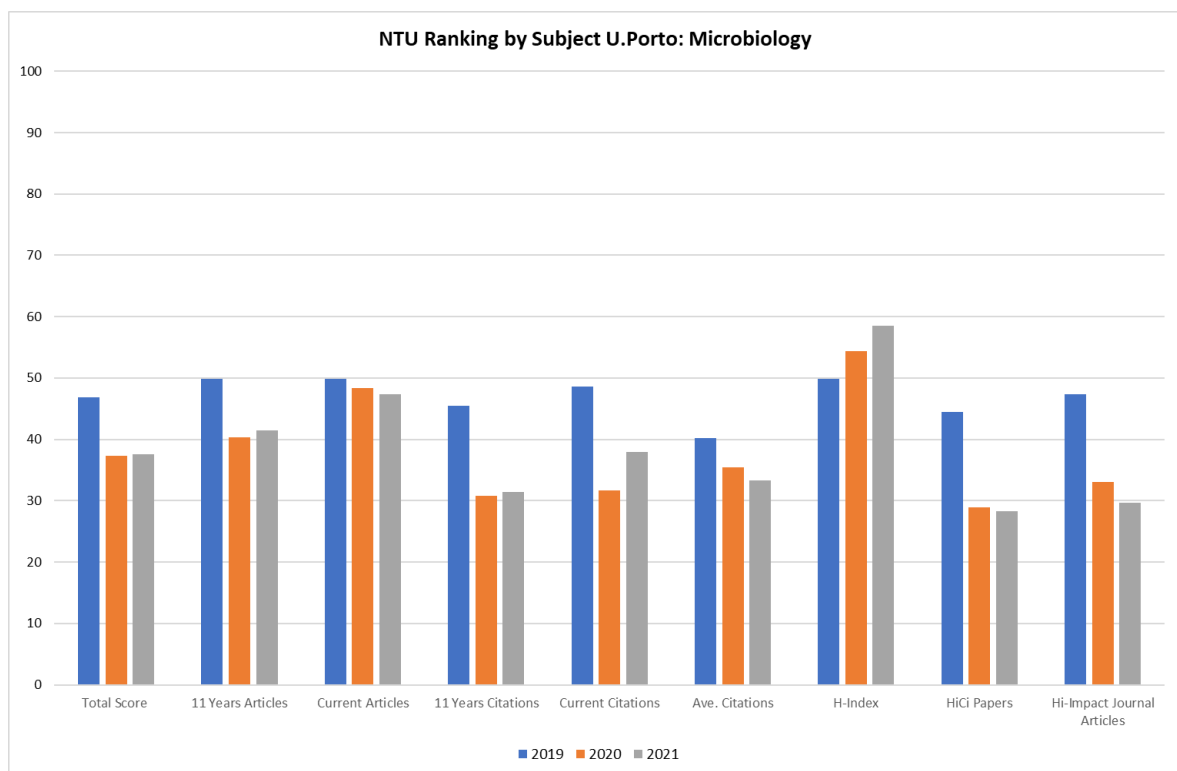
	2014	2015	2016	2017	2018	2019	2020	2021
Total Score	59,8	57,7	57,1	58,7	57,5	56,4	46,5	44
11 Years Articles	57,5	57,7	58,7	60,0	59,2	58,3	47,2	46,4
Current Articles	60,0	56,3	53,3	58,4	53,5	53	40,1	38
11 Years Citations	58,7	59,3	63,1	65,7	64,5	62,7	54,5	49,4
Current Citations	71,8	66,7	58,2	58,0	58,8	55,9	44	43
Ave. Citations	54,0	53,5	57,9	58,1	57,8	56,7	43,5	39,1
H-Index	68,1	64,6	58,9	59,7	61,2	60,9	64,7	71,8
HiCi Papers	53,5	53,3	55,8	57,9	55,7	52,7	41,8	35,6
Hi-Impact Journal Articles	58,7	54,3	52,6	52,3	51,8	53	40,5	36,7
World Rank	65	80	84	73	80	86	78	103



2.3.16 Microbiology

Nova área em 2019

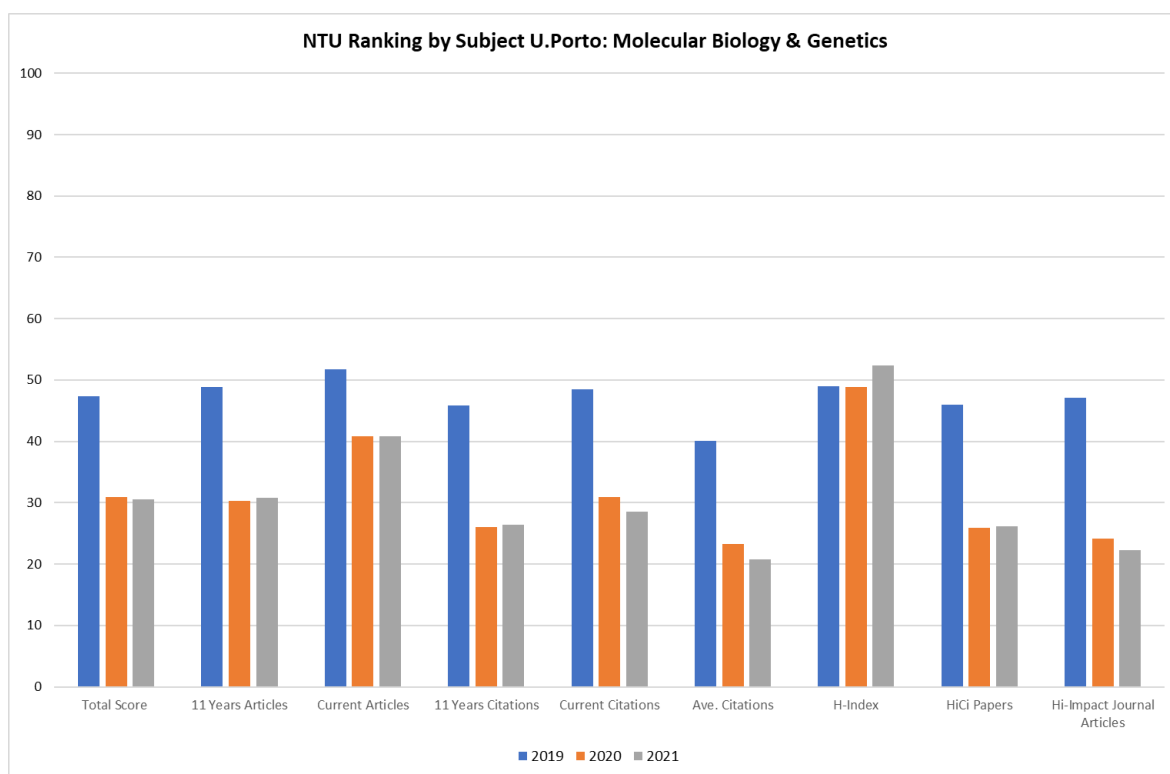
	2019	2020	2021
Total Score	46,9	37,3	37,6
11 Years Articles	49,9	40,3	41,5
Current Articles	49,8	48,3	47,4
11 Years Citations	45,5	30,8	31,4
Current Citations	48,6	31,7	38
Ave. Citations	40,2	35,4	33,3
H-Index	49,8	54,4	58,5
HiCi Papers	44,5	28,9	28,3
Hi-Impact Journal Articles	47,4	33,1	29,7
World Rank	179	174	167



2.3.17 Molecular Biology & Genetics

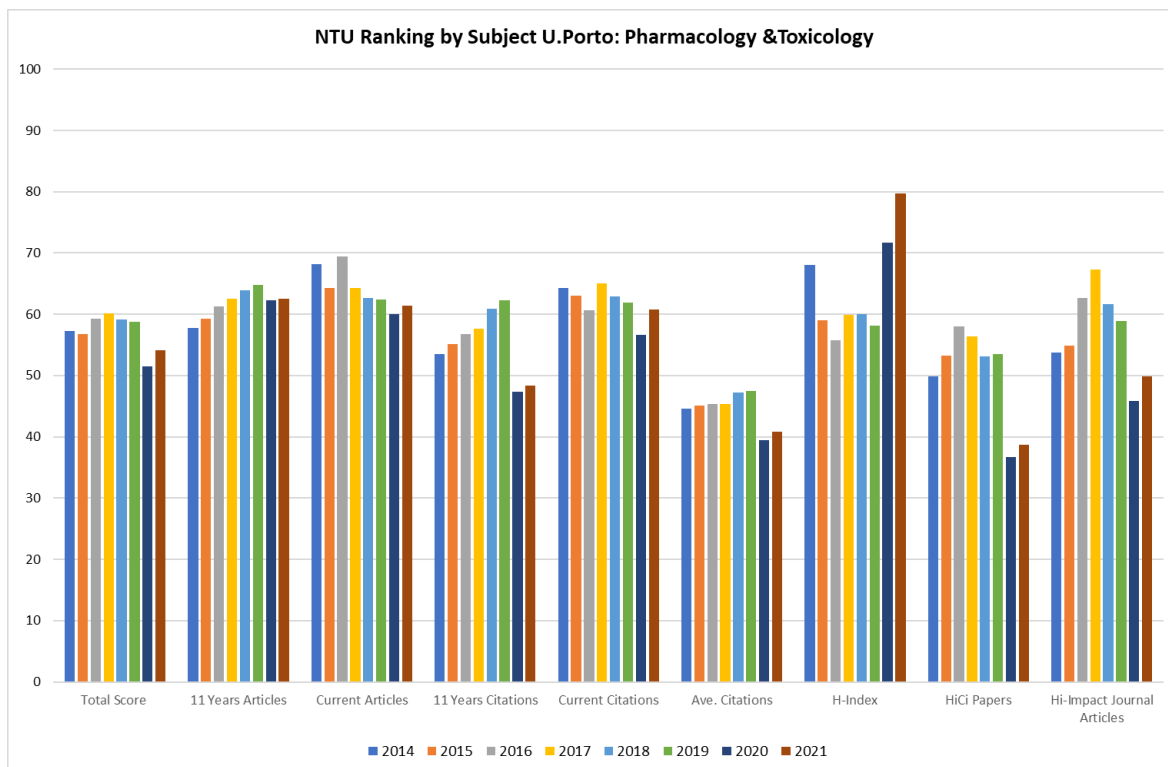
Nova área em 2019

	2019	2020	2021
Total Score	47,3	30,9	30,6
11 Years Articles	48,8	30,3	30,8
Current Articles	51,8	40,8	40,8
11 Years Citations	45,9	26	26,4
Current Citations	48,5	30,9	28,5
Ave. Citations	40,1	23,3	20,8
H-Index	49	48,9	52,4
HiCi Papers	46	25,9	26,1
Hi-Impact Journal Articles	47,1	24,1	22,3
World Rank	198	169	158



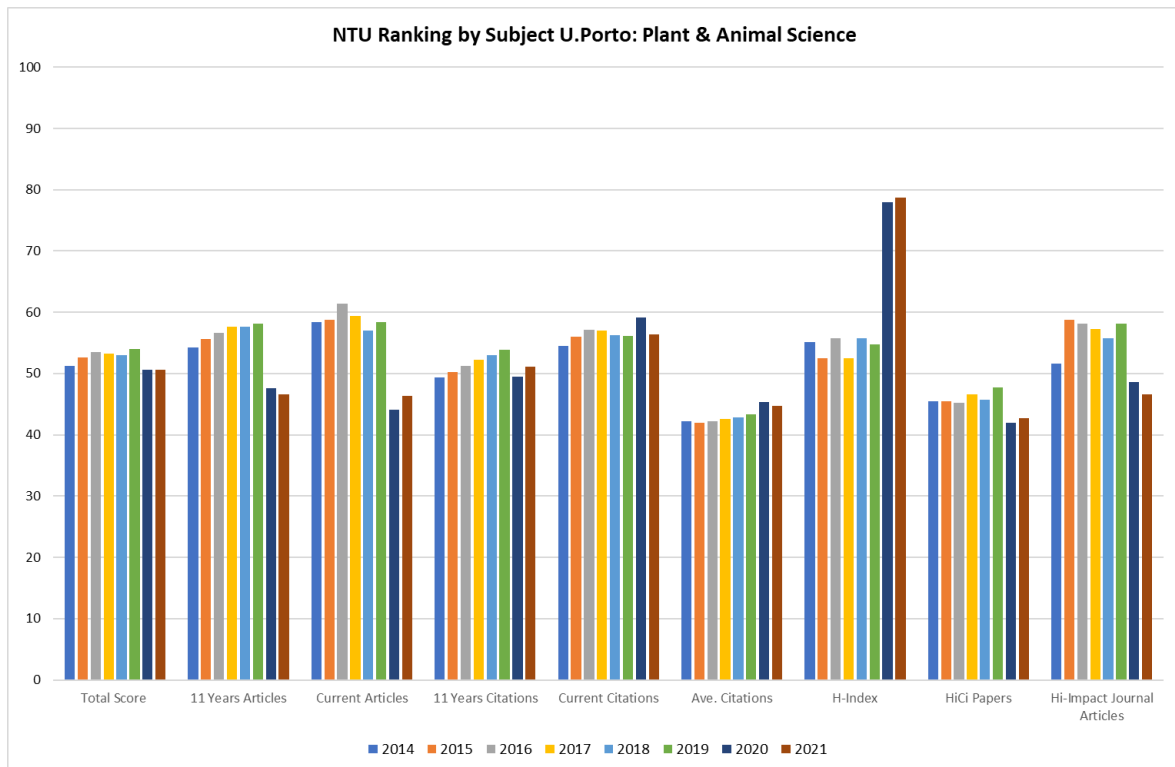
2.3.18 Pharmacology & Toxicology

	2014	2015	2016	2017	2018	2019	2020	2021
Total Score	57,3	56,8	59,3	60,1	59,2	58,8	51,5	54,1
11 Years Articles	57,8	59,3	61,3	62,5	63,9	64,8	62,3	62,5
Current Articles	68,2	64,3	69,4	64,3	62,7	62,4	60	61,4
11 Years Citations	53,5	55,1	56,8	57,6	60,9	62,3	47,3	48,4
Current Citations	64,3	63,0	60,6	65,0	62,9	61,9	56,6	60,8
Ave. Citations	44,6	45,1	45,4	45,3	47,2	47,5	39,4	40,8
H-Index	68,1	59,0	55,7	59,9	60	58,1	71,7	79,7
HiCi Papers	49,9	53,2	58	56,4	53,1	53,5	36,7	38,7
Hi-Impact Journal Articles	53,7	54,9	62,7	67,3	61,7	58,9	45,8	49,8
World Rank	87	99	65	58	67	74	50	40



2.3.19 Plant & Animal Science

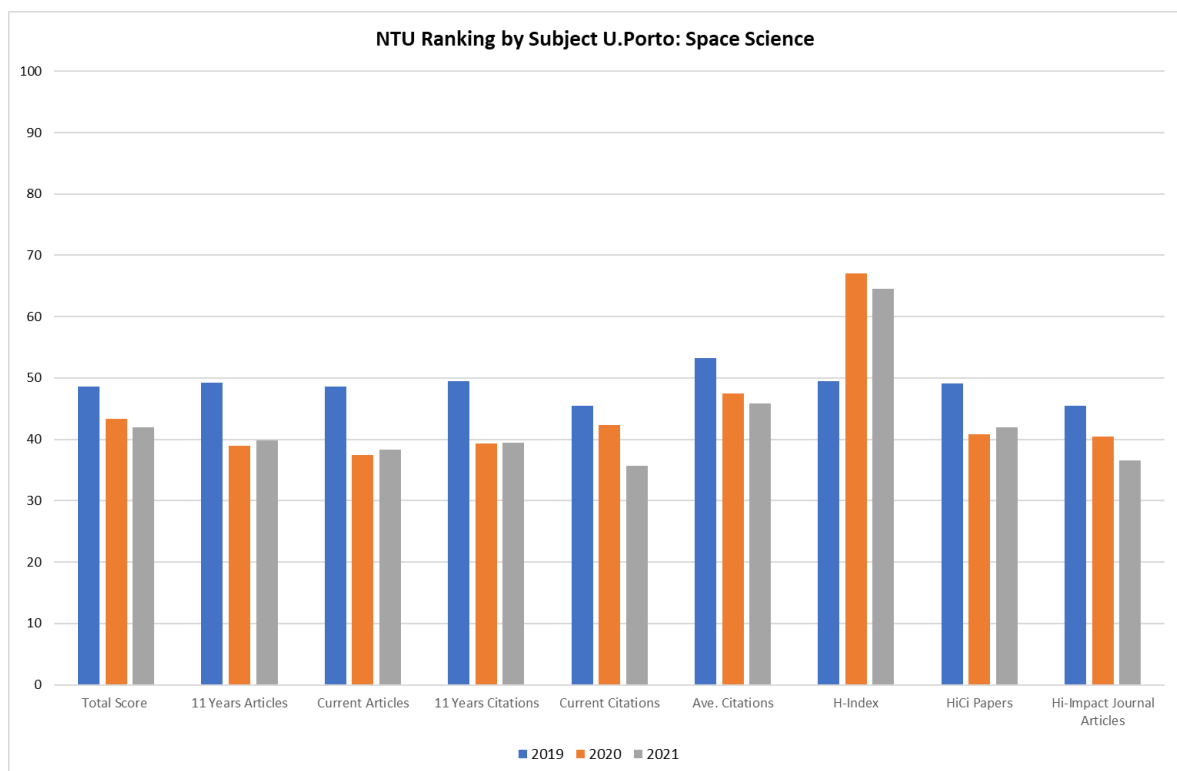
	2014	2015	2016	2017	2018	2019	2020	2021
Total Score	51,3	52,6	53,5	53,3	53	54	50,6	50,6
11 Years Articles	54,3	55,6	56,6	57,6	57,7	58,2	47,6	46,6
Current Articles	58,4	58,8	61,4	59,4	57	58,4	44,1	46,3
11 Years Citations	49,3	50,2	51,2	52,3	53	53,9	49,5	51,1
Current Citations	54,5	56,0	57,1	57,0	56,3	56,1	59,2	56,4
Ave. Citations	42,2	41,9	42,2	42,6	42,8	43,3	45,4	44,7
H-Index	55,1	52,5	55,7	52,5	55,8	54,7	78	78,7
HiCi Papers	45,5	45,5	45,2	46,6	45,7	47,7	41,9	42,7
Hi-Impact Journal Articles	51,6	58,8	58,1	57,3	55,8	58,2	48,6	46,6
World Rank	160	138	125	127	134	115	96	83



2.3.20 Space Science

Nova área em 2019

	2019	2020	2021
Total Score	48,6	43,3	42
11 Years Articles	49,2	38,9	39,8
Current Articles	48,6	37,5	38,3
11 Years Citations	49,5	39,3	39,5
Current Citations	45,5	42,3	35,7
Ave. Citations	53,2	47,5	45,8
H-Index	49,5	67	64,6
HiCi Papers	49,1	40,8	42
Hi-Impact Journal Articles	45,5	40,5	36,6
World Rank	159	187	183



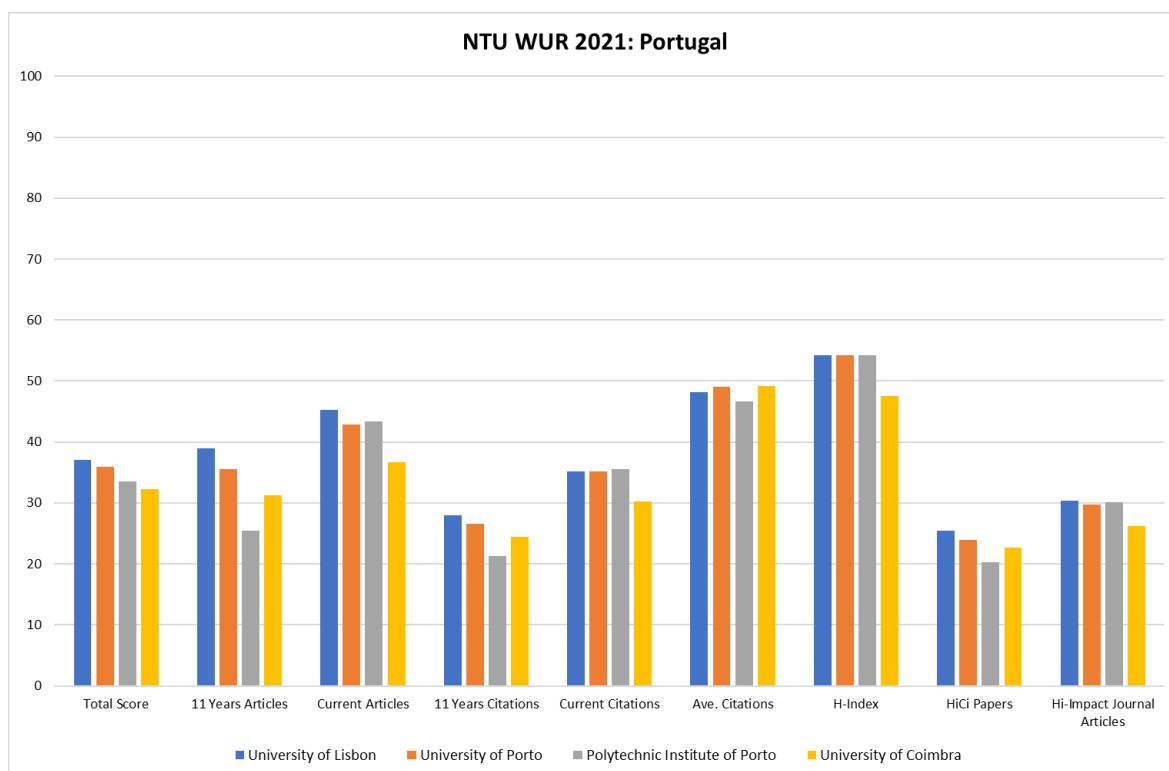
3. Posição⁶ das Universidades portuguesas no NTU Ranking

3.1 NTU World University Rankings

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
University of Lisbon					480		411	224	207	195	193	176	178	182	181
University of Porto	459	375	332	328	320	328	296	279	269	254	232	218	220	232	223
Polytechnic Institute of Porto															336
University of Coimbra			487	478	433	478	387	368	392	390	381	399	399	390	402
New University of Lisbon									477	480	478	498		486	
Minho University							494	470	490	474	467	491	498	492	
University of Aveiro								487				498			
Universidade Tecnica de Lisboa			353	380	381	380	365								

Scores 2021

	Total Score	11Years Articles	Current Articles	11Years Citations	Current Citations	Ave. Citations	H-Index	HiCi Papers	Hi-Impact Journal Articles
U.Lisboa	37	38,9	45,2	28	35,2	48,1	54,2	25,4	30,4
U.Porto	35,9	35,6	42,9	26,6	35,2	49,1	54,2	23,9	29,7
P.Porto	33,5	25,5	43,4	21,3	35,6	46,7	54,2	20,3	30,1
U.Coimbra	32,3	31,3	36,7	24,4	30,2	49,2	47,5	22,7	26,2



⁶ Dados até 2013 retirados de “Evolução das posições da Universidade do Porto nos rankings universitários”, janeiro de 2014 in https://sigarra.up.pt/up/pt/conteudos_service.conteudos_cont?pct_id=20113&pv_cod=55GoHdmanvlg; os dados de 2014, 2015, 2016, 2017, 2018 e 2019 foram retirados de <http://nturanking.lis.ntu.edu.tw> respetivamente em 10 de outubro de 2014, 12 de outubro de 2015, 10 de outubro de 2016, 10 de outubro de 2017, 6 de setembro de 2018 e 17 de junho de 2019. Dados de 2020 e 2021 retirados de <http://nturanking.csti.tw/> respetivamente em 12 e 13 de outubro de 2020 e 7 e 8 de setembro de 2021

3.2 Rankings by Field

A metodologia dos Rankings by Field é apresentada no **Anexo1**.

Evolução das posições

	Agriculture	Engineering	Life Sciences	Medicine	Natural Sciences	Social Sciences
2008	U.Porto:253	U.Aveiro:171	-	-	-	-
2009	U.Porto:199 UTL:256 U.Aveiro:299	U.Aveiro:137 UTL:189 U.Porto:257	-	-	UTL:229	-
2010	U.Porto:181 UTL:277 U.Aveiro:287	U.Aveiro:172 UTL:183 U.Porto:218	U.Porto:283	-	UTL:230 U.Porto:285	-
2011	U.Porto:159 U.Aveiro:252 UTL:288	UTL:157 U.Porto:165 U.Aveiro:168 U.Minho:291	U.Porto:290	-	UTL:224 U.Porto:226	-
2012	U.Porto:147 UTL:264	U.Porto:164 UTL:166 U.Aveiro:180 U.Minho:296	U.Porto:296	-	U.Porto:212 UTL:243	-
2013	U.Porto:119 UTL:201 U.Aveiro:294	UTL:136 U.Porto:170 U.Aveiro:173	U.Porto:262	-	UTL:229 U.Porto:276	-
2014	U.Lisboa:103 U.Porto:117 U.Aveiro:269	U.Lisboa:113 U.Porto:156 U.Aveiro:190 U.Minho:273	U.Porto:226	-	U.Lisboa:123 U.Porto:281	-
2015	U.Lisboa:95 U.Porto:106 U.Aveiro:248 UNL: 291	U.Lisboa:104 U.Porto:157 U.Aveiro:196 U.Minho:272	U.Porto:226 U.Lisboa:293 U.Coimbra:297	-	U.Lisboa:102 U.Porto:261	-
2016	U.Lisboa:102 U.Porto:105 U.Aveiro:243	U.Lisboa:103 U.Porto:162 U.Aveiro:229 U.Minho:278	U.Porto:229 U.Lisboa:266	-	U.Lisboa:124 U.Porto:290	-
2017	U.Lisboa:81 U.Porto:94 U.Aveiro:191	U.Lisboa:115 U.Porto:164 U.Aveiro:225 U.Minho:264	U.Porto:199 U.Lisboa:234	-	U.Lisboa:121 U.Porto:266	-
2018	U.Lisboa:79 U.Porto:86 U.Aveiro:203	U.Lisboa:133 U.Porto:163 U.Aveiro:241 U.Minho:288	U.Porto:203 U.Lisboa:236	-	U.Lisboa:127 U.Porto:256	-
2019	U.Lisboa:77 U.Porto:92 U.Aveiro:217	U.Lisboa:138 U.Porto:181 U.Aveiro:265 U.Minho:292	U.Porto:188 U.Lisboa:210	-	U.Lisboa:126 U.Porto:280	U.Lisboa:225
2020	U.Lisboa:79 U.Porto:82 U.Aveiro:189 UNL: 300	U.Lisboa:132 U.Porto:174 U.Aveiro:252 U.Minho:296	U.Porto:179 U.Lisboa:232	-	U.Lisboa:117 U.Porto:293	U.Lisboa:192
2021	U.Lisboa:70 U.Porto:73 U.Aveiro:178	U.Lisboa:145 U.Porto:183 U.Aveiro:275	U.Porto:156 U.Lisboa:227	U.Porto:218	U.Lisboa:117 U.Porto:287	U.Lisboa:194

Scores 2021

3.2.1 Agriculture

	Total Score	11 Years Articles	Current Articles	11 Years Citations	Current Citations	Ave. Citations	H-Index	HiCi Papers	Hi-Impact Journal Articles	World Rank
U,Lisboa	54	53,4	57,6	50,1	59,2	54,9	69,9	43,8	50,4	70
U,Porto	53,9	51,6	53,6	48,9	60	55,4	72,7	42,4	54,5	73
U,Aveiro	46,9	43,2	45,2	41,7	50,9	54,2	67	36,5	45,8	178

3.2.2 Engineering

	Total Score	11 Years Articles	Current Articles	11 Years Citations	Current Citations	Ave. Citations	H-Index	HiCi Papers	Hi-Impact Journal Articles	World Rank
U.Lisbon	42,6	45,7	44,2	42,1	38,8	42	59	36,3	37,5	145
U.Porto	41,1	40,3	40,6	39,5	37,4	46,4	61,4	35,7	34,7	183
U.Aveiro	38,7	37,9	38,5	36,7	35,3	44,1	54,8	34,2	33,6	275

3.2.3 Life Sciences

	Total Score	11 Years Articles	Current Articles	11 Years Citations	Current Citations	Ave. Citations	H-Index	HiCi Papers	Hi-Impact Journal Articles	World Rank
U.Porto	30,6	32,5	39,6	24,5	30,8	20,5	56,1	22,5	24,4	156
U.Lisbon	29,1	31,1	36,4	24,2	28,1	21,2	51	22,7	23,4	227

3.2.4 Medicine

	Total Score	11 Years Articles	Current Articles	11 Years Citations	Current Citations	Ave. Citations	H-Index	HiCi Papers	Hi-Impact Journal Articles	World Rank
U.Porto	32,3	29,4	31,4	26,5	30,8	41,3	60,4	25,4	24	218

3.2.4 Natural Sciences

	Total Score	11 Years Articles	Current Articles	11 Years Citations	Current Citations	Ave. Citations	H-Index	HiCi Papers	Hi-Impact Journal Articles	World Rank
U.Lisbon	52,5	55,1	60,2	46,7	50	53,8	66,5	45,3	47,6	117
U.Porto	45,7	42,9	50	39,4	43,7	55,7	56,8	38,4	44,2	287

3.2.5 Social Sciences

	Total Score	11 Years Articles	Current Articles	11 Years Citations	Current Citations	Ave. Citations	H-Index	HiCi Papers	Hi-Impact Journal Articles	World Rank
U.Lisboa	39,2	38,3	45,5	30,1	41,4	40,1	71,3	27,3	31,2	194

3.3 Rankings by Subject

Em 201, estão presentes Universidades portuguesas em 26 dos 27 Rankings by Subject.

A metodologia dos Rankings by Subject é apresentada no [Anexo 1](#).

World Rank by Subject	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Physics	UTL:189 UP:243	UTL:198 UP:225	UTL:226 UP:251	UTL:230	UL:136	UL:134 UP:294	UL:142 UM:288	UL:141 UM:254	UL:155 UM:286	UL:132 UM:230	UL:118 UM:252	UL:133 UC:268 UM:289
Chemistry	UTL:225 UP:242 UA:256	UP:179 UTL:230 UA:253	UP:124	UP:150 UA:194 UTL:229 UNL:284	UL:148 UP:151 UA:198 UNL:250	UL:122 UP:162 UA:189 UNL:246	UL:133 UP:172 UA:206 UNL:249	UL:142 UP:177 UA:203 UNL:270	UL:152 UP:172 UA:201 UNL:296	UL:152 UP:193 UA:207 UNL:283	UL:154 UP:183 UA:192 UNL:293	UP:166 UL:166 UA:181
Mathematics	UTL:121	UTL:148 UA:213	UTL:120 UA:141	UTL:135 UA:144	UL:75 UA:149	UL:44 UA:257	UL:52 UA:213	UL:74 UA:265	UL:60 UA:222	UL:107 UA:224	UL:114 UA:248 UP:275	UL:106
Geosciences	-	-	UL:218	UL:211	UL:126	UL:98	UL:104	UL:105	UL:103	UL:98	UL:94	UL:64
Electrical Engineering	UTL:198 UM:204	UM:166 UTL:189 UC:293	UTL:160	UTL:132 UP:209 UM:284	UL:126 UP:209 UC:274 UM:287	UL:127 UP:234 UC:273	UL:107 UP:242 UC:286 UM:288	UL:108 UP:221 UM:271 UC:295	UL:120 UP:200 UM:287	UL:132 UP:210	UL:130 UP:191 UM:298	UL:126 UP:257
Computer Science	UP:297 UTL:300	UTL:191 UP:299	UTL:142 UP:215	UTL:126 UP:250	UL:104 UP:215	UL:104 UP:209	UL:109 UP:202	UL:141 UC:239 UP:242	UL:146 UP:211	UL:176 UP:227 UC:291	UL:166 UP:230	UL:190 UP:244
Mechanical Engineering	UP:62 UTL:132 UA:138	UP:47 UTL:132 UA:152 UM:223 UC:255	UP:30 UTL:107 UA:126 UC:241	UP:92 UTL:94 UA:131 UC:264 UM:298	UL:59 UP:65 UA:158 UC:205	UL:47 UP:80 UA:151 UC:234	UL:40 UP:84 UA:121 UC:253 UM:288	UL:53 UP:73 UA:157 UC:243 UM:282	UL:66 UP:80 UA:145 UM:237 UC:294	UL:58 UP:86 UA:165 UM:232	UL:52 UP:78 UA:207 UM:226	UL:66 UP:103 UA:259 UM:272 UC:292
Chemical Engineering	UP:85 UTL:140 UA:181 UM:250 UC:275	UP:58 UTL:136 UA:174 UM:178 UC:299	UP:60 UA:150 UTL:151 UM:183	UP:64 UTL:145 UA:161 UM:175 UC:263	UP:69 UL:129 UA:175 UM:201 UC:250	UP:76 UL:132 UA:145 UM:187 UC:256	UP:80 UL:119 UA:179 UM:210 UC:267	UP:82 UL:100 UA:152 UM:231 UNL:281 UC:289	UP:83 UL:107 UA:159 UM:248 UNL:267	UP:89 UL:106 UA:171 UM:245 UNL:255	UP:92 UL:100 UA:171 UNL:218	UP:74 UL:79 UA:134 UNL:186

World Rank by Subject	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Materials Science	UA:102 UM:246 UP:255 UTL:276	UA:120 UM:221 UP:239 UTL:279	UA:131 UM:214 UP:291	UA:114 UM:215 UP:226	UA:122 UL:207 UP:218 UM:218	UA:147 UL:191 UP:195 UM:214	UA:159 UL:207 UM:216 UP:247	UA:180 UM:198 UL:227 UP:245	UA:180 UP:228 UM:245 UL:267	UA:199 UM:212 UP:244 UL:248	UA:185 UM:209 UL:216 UP:222	UA:202 UM:202 UL:244 UP:247
Civil Engineering	UTL:109 UP:126 UM:278	UP:97 UTL:115 UA:227 UM:240 UNL:247	UP:67 UTL:90 UM:241 UC:248 UNL:253 UA:295	UP:54 UTL:67 UM:217 UC:246 UA:269	UL:47 UP:50 UM:187 UC:224 UA:261 UNL:300	UL:36 UP:59 UM:209 UA:228 UC:241	UL:28 UP:58 UM:182 UC:194 UA:245 UNL:294	UL:29 UP:53 UA:195 UM:223 UC:230 UNL:275	UL:41 UP:53 UA:208 UC:216 UM:219 UNL:296	UL:47 UP:79 UM:211 UC:239 UA:243 UNL:299	UL:57 UP:86 UA:179 UM:225 UC:230 UNL:274	UL:31 UP:139 UM:156 UC:170 UA:231 UNL:237
Agricultural Sciences	-	UP:66 UTL:162 UA:249 UL:299	UP:57 UM:209 UTL:223 UA:261	UP:47 UTL:125 UM:204 UA:247	UP:69 UL:87	UP:62 UL:83 UM:155	UP:58 UL:82 UM:146	UP:57 UL:62 UM:131 UA:278	UP:31 UL:75 IPB:105 UM:138 UA:254	UP:50 UL:83 UM:123 IPB:141 UA:229	UP:45 UL:84 IPB:107 UM:110 UA:188	UP:36 UL:85 UM:102 UA:191
Environment/ Ecology	-	UP:192 UA:193 UTL:261 UL:281 UC:294	UP:185 UA:212 UTL:262 UC:266	UP:163 UTL:198 UA:223 UC:273 UL:290	UL:118 UP:126 UA:206	UL:103 UP:117 UA:178 UE:185 UC:292	UL:99 UP:125 UA:187 UE:216 UC:265	UL:84 UP:110 UA:144 UC:293	UL:84 UP:111 UA:160 UC:293	UL:77 UP:118 UA:173 UC:268	UL:73 UP:101 UA:150 UC:248 UE:300	UL:70 UP:93 UC:237
Plant & Animal Science	-	UL:296	UL:242 UP:277	UP:196 UL:250 UAlg:280 UTL:282	UL:95 UP:160 UAlg:280	UL:87 UP:138 UNL:204 UA:266 UAlg:292	UL:101 UP:125 UA:252 UNL:267 UAlg:280	UL:83 UP:127 UA:212 UNL:256 UAlg:286	UL:70 UP:134 UA:246 UNL:292 UAlg:292	UL:72 UP:115 UA:261 UAlg:268 UNL:279	UL:82 UP:96 UNL:244 UA:269	UL:70 UP:83 UA:239 UAlg:293
Pharmacology & Toxicology	-	-	UP:206 UC:237	UP:149 UC:37	UP:87 UC:267	UP:99 UC:202	UP:65 UC:193	UP:58 UC:206	UP:67 UL:159 UC:221	UP:74 UL:136 UC:212	UP:50 UL:152 UC:162	UP:40 UC:116 UL:126
Biology & Biochemistry	-	-	-	-	-	-	-	-	-	UP:165 UL:209	UP:179 UL:231	UP:160 UL:205 UC:279
Clinical Medicine	-	-	-	-	-	-	-	-	-	UP:241	UP:224 UL:288	UP:204
Economics & Business	-	-	-	-	-	-	-	-	-	UL:205 UNL:233	UL:167 UNL:193	UL:193 UNL:240

World Rank by Subject	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Immunology	-	-	-	-	-	-	-	-	-	UP:192 UL:236 UC:270	UP:179 UL:208 UC:232	UP:195 UL:217 UC:266
Microbiology	-	-	-	-	-	-	-	-	-	UP:179 UL:198 UNL:216 UM:259	UL:163 UP:174 UNL:212 UM:212	UP:167 UL:187 UM:205 UNL:215
Molecular Biology & Genetics	-	-	-	-	-	-	-	-	-	UP:198 UL:249 UC:284	UP:169 UL:240 UC:295	UP:158 UL:220 UC:291
Neuroscience & Behavior	-	-	-	-	-	-	-	-	-	UL:170 UC:246	UL:194 UC:264	UL:210 UC:269
Psychiatry / Psychology	-	-	-	-	-	-	-	-	-	-	-	-
Social Sciences, General	-	-	-	-	-	-	-	-	-	-	-	UL:189
Space Science	-	-	-	-	-	-	-	-	-	UL:127 UP:159	UL:121 UP:187	UL:123 UP:183
Biomedical Engineering	-	-	-	-	-	-	-	-	-	-	-	UM:90
Energy Science & Engineering	-	-	-	-	-	-	-	-	-	-	-	UL:113 UP:150
Environmental Science & Engineering	-	-	-	-	-	-	-	-	-	-	-	UL:93 UP:96 UA:139 UC:282

3.3.1 Agricultural Sciences

	Total Score	11 Years Articles	Current Articles	11 Years Citations	Current Citations	Ave. Citations	H-Index	HiCi Papers	Hi-Impact Journal Articles	World Rank
U.Porto	49,4	51,2	48,4	46,6	48,8	45,9	77,4	43,4	41,8	36
U.Lisboa	44,5	48,7	46	42,6	41,5	43,4	70,6	37,7	34,1	85
U.Minho	42,9	40,2	37,2	38,2	36,3	58,3	70,6	40,8	32,9	102
U.Aveiro	39,8	40,3	36,1	35,9	34,6	48,2	66,1	36,7	30,6	191

3.3.2 Biology & Biochemistry

Nova área 2019

	Total Score	11 Years Articles	Current Articles	11 Years Citations	Current Citations	Ave. Citations	H-Index	HiCi Papers	Hi-Impact Journal Articles	World Rank
U.Porto	36,4	35,8	40,5	29,0	34,9	40,9	63,3	26,9	29,5	160
U.Lisboa	35,1	35,4	37,2	28,9	31,4	41,1	59,8	27,2	28,6	205
U.Coimbra	32,7	31,4	31,8	27,5	28,3	44,0	56,3	26,0	26,1	279

3.3.3 Biomedical Engineering

Nova área 2021

	Total Score	11 Years Articles	Current Articles	11 Years Citations	Current Citations	Ave. Citations	H-Index	HiCi Papers	Hi-Impact Journal Articles	World Rank
U.Minho	41,3	42,3	39,3	39,3	33,1	64,8	58,2	36,3	28,2	90

3.3.4 Chemical Engineering

	Total Score	11 Years Articles	Current Articles	11 Years Citations	Current Citations	Ave. Citations	H-Index	HiCi Papers	Hi-Impact Journal Articles	World Rank
U.Porto	45,3	49	44,9	51,9	39,7	38,9	59,7	43,9	36,7	74
U.Lisboa	44,9	47,9	48,2	46,5	43,4	33,8	63,8	41,2	37,4	79
U.Aveiro	41,3	41,6	40,1	42,7	37,8	37,9	57	39,5	36,9	134
UNL	39,2	39,1	37,3	39,3	35,1	36,9	57	39,5	33,5	186

3.3.5 Chemistry

	Total Score	11 Years Articles	Current Articles	11 Years Citations	Current Citations	Ave. Citations	H-Index	HiCi Papers	Hi-Impact Journal Articles	World Rank
U.Porto	45,6	52,3	51,3	43	41	39,6	55,9	40,6	43	166
U.Lisboa	45,6	56,4	53,4	44,7	39,7	38,1	53,3	41,3	39,6	166
U.Aveiro	45,1	49,3	50,7	42,1	40,2	42,1	55	42,3	41,4	181

3.3.6 Civil Engineering

	Total Score	11 Years Articles	Current Articles	11 Years Citations	Current Citations	Ave. Citations	H-Index	HiCi Papers	Hi-Impact Journal Articles	World Rank
U.Lisboa	50,4	50,8	39,4	64	44,4	42,4	70,2	43,4	50,5	31
U.Porto	39,6	38,4	31,9	45,7	33,1	39,6	60,3	36,7	35,7	139
U.Minho	39	37,1	29	46,2	32,2	45,1	60,3	35,8	32,5	156
U.Coimbra	38,5	36,9	28,6	44,4	32	41	60,3	39,1	31,3	170
U.Aveiro	36,8	33,9	26,8	40,6	29,3	41,3	56,3	35,8	34,7	231
UNL	36,6	33	26,5	39,4	30	41,8	58,3	39,1	30,3	237

3.3.7 Clinical Medicine

Nova área 2019

	Total Score	11 Years Articles	Current Articles	11 Years Citations	Current Citations	Ave. Citations	H-Index	HiCi Papers	Hi-Impact Journal Articles	World Rank
U.Porto	31,1	28,8	31,8	26,5	31,1	28,9	60,1	25,4	24,1	204

3.3.8 Computer Science

	Total Score	11 Years Articles	Current Articles	11 Years Citations	Current Citations	Ave. Citations	H-Index	HiCi Papers	Hi-Impact Journal Articles	World Rank
U.Lisboa	41,9	46,3	47,1	44,8	34,6	26,3	52,3	41,1	40,3	190
U.Porto	40,2	40,5	41,7	42,4	33,8	28,6	52,3	42,7	38	244

3.3.9 Economics & Business

Nova área 2019

	Total Score	11 Years Articles	Current Articles	11 Years Citations	Current Citations	Ave. Citations	H-Index	HiCi Papers	Hi-Impact Journal Articles	World Rank
U.Lisboa	46,3	45,6	60,8	33,4	50,5	39,3	70,6	29,8	47,5	193
UNL	44,9	43,7	49,8	35,6	45,6	53,8	68,1	34	38,8	240

3.3.10 Electrical Engineering

	Total Score	11 Years Articles	Current Articles	11 Years Citations	Current Citations	Ave. Citations	H-Index	HiCi Papers	Hi-Impact Journal Articles	World Rank
U.Lisboa	42,8	45,2	42,8	46,4	38,6	35,3	62,3	37,7	37,6	126
U.Porto	39,1	38,4	38,3	38,8	38	35,1	62,3	32,9	34,7	257

3.3.11 Energy Science & Engineering

Nova área 2021

	Total Score	11 Years Articles	Current Articles	11 Years Citations	Current Citations	Ave. Citations	H-Index	HiCi Papers	Hi-Impact Journal Articles	World Rank
U.Lisboa	43,2	48,2	41	43,3	38	43,7	62,9	39,2	35,8	113
U.Porto	41,5	38,3	37,8	38,6	34,8	56,3	60,2	39	34,7	150

3.3.12 Environment / Ecology

	Total Score	11 Years Articles	Current Articles	11 Years Citations	Current Citations	Ave. Citations	H-Index	HiCi Papers	Hi-Impact Journal Articles	World Rank
U.Lisboa	53,3	58,4	65,4	44,6	49,4	53,7	65,7	45	48,7	70
U.Porto	50,7	54,4	55	43	46,8	54,9	69,9	43,2	46,3	93
U.Coimbra	43	44,4	45,8	36,8	37,4	50,7	60	38,7	36,8	237

3.3.13 Environmental Science & Engineering

Nova área 2021

	Total Score	11 Years Articles	Current Articles	11 Years Citations	Current Citations	Ave. Citations	H-Index	HiCi Papers	Hi-Impact Journal Articles	World Rank
U.Lisboa	47,9	56,2	54,1	50,2	41,5	48,4	60,9	40,5	36,8	93
U.Porto	47,7	50,5	46,7	49,1	40,7	55,9	67,4	42,7	36,2	96
U.Aveiro	45,3	51	47,6	46,6	40,4	48,3	64,8	37	34,5	139
U.Coimbra	39,4	41,7	39,6	39,9	32,9	46,8	55,7	35,7	29,2	282

3.3.14 Geosciences

	Total Score	11 Years Articles	Current Articles	11 Years Citations	Current Citations	Ave. Citations	H-Index	HiCi Papers	Hi-Impact Journal Articles	World Rank
U.Lisboa	53,2	48,7	52,4	42,7	56	43,9	66,7	44,6	71,6	64

3.3.15 Immunology

Nova área 2019

	Total Score	11 Years Articles	Current Articles	11 Years Citations	Current Citations	Ave. Citations	H-Index	HiCi Papers	Hi-Impact Journal Articles	World Rank
U.Porto	34,6	31,8	36,1	28,9	35,9	32,3	62	28,5	28,9	195
U.Lisboa	33,9	31,5	34,1	29,1	35	35,1	56,9	29,9	27,5	217
U.Coimbra	32,9	29,3	30,7	28,3	31,3	47,6	50,6	29	25,2	266

3.3.16 Materials Science

	Total Score	11 Years Articles	Current Articles	11 Years Citations	Current Citations	Ave. Citations	H-Index	HiCi Papers	Hi-Impact Journal Articles	World Rank
U.Aveiro	43,1	46,4	45,7	42,5	38,5	44,8	55,2	34,4	41,3	202
U.Minho	43,1	46,6	45,1	42,9	38,5	45,4	56,1	34,9	40,2	202
U.Lisboa	42,2	46	44,2	42,1	37,5	44,5	53,3	34,5	39,6	244
U.Porto	42,1	45	43,7	41,7	38,4	45,3	55,2	33,9	38,5	247

3.3.17 Mathematics

	Total Score	11 Years Articles	Current Articles	11 Years Citations	Current Citations	Ave. Citations	H-Index	HiCi Papers	Hi-Impact Journal Articles	World Rank
U.Lisboa	45,9	64,1	62,3	53,2	35,8	35,9	49,5	30	36,9	106

3.3.18 Mechanical Engineering

	Total Score	11 Years Articles	Current Articles	11 Years Citations	Current Citations	Ave. Citations	H-Index	HiCi Papers	Hi-Impact Journal Articles	World Rank
U.Lisboa	47	52,1	44,3	53,2	44,4	35,5	66,8	38,3	44,7	66
U.Porto	44	46,4	38	49,4	43	39,1	71,8	35,6	36,7	103
U.Aveiro	38,5	38,7	32,2	40,8	34,9	42,5	58,6	35,6	31,7	259
U.Minho	38,1	38,3	32,6	39,9	35	41,2	56,9	35,6	31,8	272
U.Coimbra	37,7	40,1	33,4	40,6	35,3	34,9	56,9	34,5	31,4	292

3.3.19 Microbiology

Nova área 2019

	Total Score	11 Years Articles	Current Articles	11 Years Citations	Current Citations	Ave. Citations	H-Index	HiCi Papers	Hi-Impact Journal Articles	World Rank
U.Porto	37,6	41,5	47,4	31,4	38	33,3	58,5	28,3	29,7	167
U.Lisboa	36,8	39,5	45,6	31,2	36,3	35	55,3	27,9	30,1	187
U.Minho	36,1	34,9	43	29,5	36,6	37,1	56,9	27,9	29,7	205
UNL	35,9	39,6	41,8	31,7	35,2	36,3	50,6	29,9	28,4	215

3.3.20 Molecular Biology & Genetics

Nova área 2019

	Total Score	11 Years Articles	Current Articles	11 Years Citations	Current Citations	Ave. Citations	H-Index	HiCi Papers	Hi-Impact Journal Articles	World Rank
U.Porto	30,6	30,8	40,8	26,4	28,5	20,8	52,4	26,1	22,3	158
U.Lisboa	29,2	28,7	37,3	26,1	25,8	21,9	48,8	26,3	21,5	220
U.Coimbra	28,0	27,0	32,5	25,8	24,3	23,7	47,0	26,4	20,9	291

3.3.21 Neuroscience & Behavior

Nova área 2019

	Total Score	11 Years Articles	Current Articles	11 Years Citations	Current Citations	Ave. Citations	H-Index	HiCi Papers	Hi-Impact Journal Articles	World Rank
U.Lisboa	35	32,6	30,8	32,1	25,8	58,3	52,9	32,9	24,6	210
U.Coimbra	33,8	31,5	28	31,1	25,2	55,8	52,9	30,8	25,2	269

3.3.22 Pharmacology & Toxicology

	Total Score	11 Years Articles	Current Articles	11 Years Citations	Current Citations	Ave. Citations	H-Index	HiCi Papers	Hi-Impact Journal Articles	World Rank
U.Porto	54,1	62,5	61,4	48,4	60,8	40,8	79,7	38,7	49,8	40
U.Coimbra	46,3	50	48,5	38,4	48,6	39,8	77,3	36,3	41,8	116
U.Lisboa	45,6	52,4	50,1	40,6	47	40,8	72,8	33,4	37,8	126

3.3.23 Physics

	Total Score	11 Years Articles	Current Articles	11 Years Citations	Current Citations	Ave. Citations	H-Index	HiCi Papers	Hi-Impact Journal Articles	World Rank
U.Lisboa	48,9	55,6	47,8	52,7	43,9	51,6	63,7	47	35	133
U.Coimbra	44,4	41,3	39,7	45,1	36,6	65,4	58,1	43,7	33,2	268
U.Minho	44	39,5	38,2	43,5	36,8	68,9	59	41,3	34,4	289

3.3.24 Plant & Animal Science

	Total Score	11 Years Articles	Current Articles	11 Years Citations	Current Citations	Ave. Citations	H-Index	HiCi Papers	Hi-Impact Journal Articles	World Rank
U.Lisboa	52,1	49,1	48,6	54,5	55,7	46,1	76,3	46,6	45,9	70
U.Porto	50,6	46,6	46,3	51,1	56,4	44,7	78,7	42,7	46,6	83
U.Aveiro	43,6	38,2	37,9	43,6	42,6	46,8	64,4	37,1	44	239
U.Algarve	42,3	37,9	36,4	43,7	41,6	48,2	64,4	37,8	36,1	293

3.3.25 Social Sciences, General

Nova área 2019

	Total Score	11 Years Articles	Current Articles	11 Years Citations	Current Citations	Ave. Citations	H-Index	HiCi Papers	Hi-Impact Journal Articles	World Rank
U.Lisboa	39,7	37,6	42,1	31,1	39	53	70,4	29,2	28,6	189

3.3.26 Space Science

Nova área 2019

	Total Score	11 Years Articles	Current Articles	11 Years Citations	Current Citations	Ave. Citations	H-Index	HiCi Papers	Hi-Impact Journal Articles	World Rank
U.Lisboa	44,4	39,5	41	39,7	42,2	48,1	73,8	43,1	36,6	123
U.Porto	42	39,8	38,3	39,5	35,7	45,8	64,6	42	36,6	183

Anexo 1 - Metodologia do NTU Ranking by Field & Subject Categories

“Field & Subject Categories

NTU World University Rankings divided subjects into 6 fields, with them being Agriculture, Engineering, Life Science, Medicine, Nature Sciences and Social Sciences respectively, and categorized them in regards to the ESI research fields.

The 6 fields covered 27 subjects, in which 20 of them were categorized according to ESI research fields, and the 7 other subjects were added by NTU Rankings that corresponded to the division of the WOS categories, which could be found in the figure below.

Agriculture

Agricultural Sciences
Environment/Ecology
Plant & Animal Science

Medicine

Clinical Medicine
Psychiatry/Psychology

Engineering

Biomedical Engineering
Chemical Engineering
Civil Engineering
Computer Science
Electrical Engineering
Energy Science & Engineering
Environmental Science & Engineering
Materials Science
Mechanical Engineering

Natural Sciences

Chemistry
Geosciences
Mathematics
Physics
Space Science

Life Sciences

Biology & Biochemistry
Immunology
Microbiology
Molecular Biology & Genetics
Neuroscience & Behavior
Pharmacology & Toxicology

Social Sciences

Economics & Business
Social Sciences, General

Field	Subject	WOS Category
Agriculture	Agricultural Sciences	Agricultural Economics & Policy Agricultural Engineering Agriculture, Dairy & Animal Science Agriculture, Multidisciplinary Agriculture, Soil Science Agronomy Food Science & Technology Horticulture Nutrition & Dietetics
	Environment/Ecology	Biodiversity Conservation Ecology Environmental Sciences Water Resources
	Plant & Animal Science	Entomology Fisheries Forestry Marine & Freshwater Biology Mycology Ornithology Plant Sciences Veterinary Sciences Zoology

Field	Subject	WOS Category
Engineering	Biomedical Engineering	Engineering, Biomedical Cell & Tissue Engineering
	Chemical Engineering	Engineering, Chemical Green & Sustainable Science & Technology Polymer Science
	Civil Engineering	Construction & Building Technology Engineering, Civil Engineering, Geological Engineering, Ocean Transportation Transportation Science & Technology
	Computer Science	Artificial Intelligence Cybernetics Hardware & Architecture Information Systems Interdisciplinary Applications Software Engineering Theory & Methods
	Electrical Engineering	Engineering, Electrical & Electronic Instruments & Instrumentation Telecommunications Robotics Imaging Science & Photographic Technology
	Energy Science & Engineering	Energy & Fuels Engineering, Petroleum Nuclear Science & Technology
	Environmental Science & Engineering	Engineering, Environmental Environmental Sciences Environmental Studies
	Materials Science	Materials Science, Biomaterials Materials Science, Ceramics Materials Science, Characterization & Testing Materials Science, Coatings & Films Materials Science, Composites Materials Science, Multidisciplinary Materials Science, Paper & Wood Materials Science, Textiles Metallurgy & Metallurgical Engineering
	Mechanical Engineering	Engineering, Aerospace Engineering, Industrial Engineering, Manufacturing Engineering, Marine Engineering, Mechanical Mechanics Mining & Mineral Processing Thermodynamics Automation & Control Systems

Field	Subject	WOS Category
Life Sciences	Biology & Biochemistry	Anatomy & Morphology Biochemical Research Methods Biology Biophysics Evolutionary Biology Mathematical & Computational Biology Parasitology Pathology Physiology Reproductive Biology
		Immunology Infectious Diseases Virology
		Biotechnology & Applied Microbiology Microbiology Microscopy
		Biochemistry & Molecular Biology Cell & Tissue Engineering

Field	Subject	WOS Category
		Cell Biology Developmental Biology Genetics & Heredity
	Neuroscience & Behavior	Behavioral Sciences Neuroimaging Neurosciences
	Pharmacology & Toxicology	Pharmacology & Pharmacy Substance Abuse Toxicology

Field	Subject	WOS Category
Medicine	Clinical Medicine	Allergy Andrology Anesthesiology Audiology & Speech-Language Pathology Cardiac & Cardiovascular Systems Clinical Neurology Critical Care Medicine Dentistry, Oral Surgery & Medicine Dermatology Emergency Medicine Endocrinology & Metabolism Gastroenterology & Hepatology Geriatrics & Gerontology Gerontology Health Care Sciences & Services Hematology Integrative & Complementary Medicine Medical Ethics Medical Informatics Medical Laboratory Technology Medicine, General & Internal Medicine, Legal Medicine, Research & Experimental Nursing Obstetrics & Gynecology Oncology Ophthalmology Orthopedics Otorhinolaryngology Pediatrics Peripheral Vascular Disease Primary Health Care Radiology, Nuclear Medicine & Medical Imaging Rehabilitation Respiratory System Rheumatology Surgery Transplantation Tropical Medicine Urology & Nephrology
	Psychiatry/Psychology	Psychiatry Psychology Psychology, Applied Psychology, Biological Psychology, Clinical Psychology, Developmental Psychology, Educational Psychology, Experimental Psychology, Mathematical Psychology, Multidisciplinary Psychology, Psychoanalysis Psychology, Social

Field	Subject	WOS Category
Natural Sciences	Chemistry	Chemistry, Analytical Chemistry, Applied Chemistry, Inorganic & Nuclear Chemistry, Medicinal Chemistry, Multidisciplinary Chemistry, Organic Chemistry, Physical Crystallography Electrochemistry Spectroscopy
	Geosciences	Geochemistry & Geophysics Geography Geography, Physical Geology Geosciences, Multidisciplinary Imaging Science & Photographic Technology Limnology Meteorology & Atmospheric Sciences Mineralogy Oceanography Paleontology Remote Sensing Soil Science
	Mathematics	Logic Mathematics Mathematics, Applied Mathematics, Interdisciplinary Applications Statistics & Probability
	Physics	Acoustics Nanoscience & Nanotechnology Nuclear Science & Technology Optics Physics, Applied Physics, Atomic, Molecular & Chemical Physics, Condensed Matter Physics, Fluids & Plasmas Physics, Mathematical Physics, Multidisciplinary Physics, Nuclear Physics, Particles & Fields Quantum Science & Technology
	Space Science	Astronomy & Astrophysics

Field	Subject	WOS Category
Social Sciences	Economics & Business	Business Business, Finance Economics Industrial Relations & Labor Management Operations Research & Management Science
	Social Sciences, General	Area Studies Asian Studies Communication Criminology & Penology Demography Development Studies Education & Educational Research Education, Scientific Disciplines Education, Special Environmental Studies Ergonomics Ethics Ethnic Studies Family Studies Film, Radio, Television Folklore Health Policy & Services

Field	Subject	WOS Category
		Hospitality, Leisure, Sport & Tourism Information Science & Library Science International Relations Law Planning & Development Political Science Public Administration Public, Environmental & Occupational Health Regional & Urban Planning Social Issues Social Sciences, Biomedical Social Sciences, Interdisciplinary Social Sciences, Mathematical Methods Social Work Sociology Sport Sciences Urban Studies Womens Studies

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⁷ <http://nturanking.csti.tw/methodology/subjectCategories> acedido 7 de setembro de 2021