Fundusze Europejskie dla Rozwoju Społecznego | Rzeczpospolita Polska | Dofinansowane przez Unię Europejską | NAWA Narodowa Agencja Wymiany Akademickiej

Types of scientific works/papers

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Establishment of terminology

- **The methodology of a scientific work/paper** is the set of technical recipes on how to work effectively (def. M. Heller)
- **A scientific work/paper** is a special type of creation due to its connection with ethics, stemming from the specific relation to the subject of the research, the aim of the research, and the methods of research.

A scientific work/paper is a specific form of creative work. In the broadest sense, it consists in finding existing or determining new connections between already present phenomena (things, or parts of them), or between concepts and phenomena (def. J. Pietera).

The characteristics of scientific works/papers:

a) studying previously unknown parts of reality (for example, new texts, new establishments, or new documents)

b) invoking phenomena and studying them

c) developing concepts, patterns, or models

The aim of a scientific work/paper - searching for truth

- **A scientific** description is "nothing else than a rigorously thought-through and ordered written "report" from the course of the research and the results obtained from it, along with the conclusions that arise from them (the results)"

Classification

1st criterion - The size of the research and the written paper:

1. Small contributions,
2. Contributions,
3. Research reports,
4. Systematic papers,
5. Essays,
6. Research results,
7. Opus,
8. Opus magnum.

Classification

2nd criterion - Rules of originality:

1. Compilations,
2. Imitation works,
3. Independent works,
4. Original works,
5. Breakthrough works

3rd criterion - The complexity of the problems and aiming to isolate new disciplines and scientific specializations ;

1. Team,
2. Joint,
3. Collective.

Classification

4th criterion - Compiling knowledge for scientific purposes

1. Bulletins,
2. Notes,
3. Scientific compendiums,
4. Dictionaries,
5. Encyclopaedias.

5th criterion - the didactic requirements of written papers

1. Reports from laboratory exercises,
2. Papers on a subject,
3. BA and MA thesis papers,
4. Manuals,
5. Textbooks.

Classification

6th criterion - Research results :

1. Scientific lectures
2. Scientific articles
3. Thesis papers.
4. Scientific dissertations.

The characteristics of selected scientific works/papers

Scientific lectures - the contents of scientific works/papers can be an oral or written presentation of the results of a given creative activity, scientific lectures are the most basic oral form of disseminating research results

Scientific articles and statements

An article is most often a small scientific paper (20 000 - 40 000 characters) published in a magazine, collection of papers, scientific journal, or other scientific or specialized publication.

An article should, as a rule, be a factual presentation of the most important contents of the problem being studied. It should clearly capture the theses and accentuate the main idea of the phenomenon under study. That is why introductions into research, discussion reports, contributions, and scientific reports and statements are considered articles.

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The characteristics of selected scientific works/papers

Medical articles can be of the following types:

- ***Casuistic*** - meant to present the description of a clinical situation that rarely occurs in practice to other members of the scientific community. The most frequent subjects for casuistic articles are detailed descriptions of congenital defects, a non-specific clinical picture of a given disease entity, rare complications of the treatment process, or an unexpected course of a disease. The description presented in a casuistic article can relate to a single case, as its aim is not to draw general conclusions or to build a model explaining the phenomenon being described. This type of article does not contain a description of the research methodology, but is just a case study.
- *Casuistic articles have great educational value, because they show "something" which differs from the present model of a given disease entity. They can also be hints on the directions of further research*

The characteristics of selected scientific works/papers

Medical articles can be of the following types:

- ***Original*** **-** these are a type of report describing the process of modelling a studied phenomenon. An original article has its structure contain the description of the subject of the research, a detailed description of the procedure of creating the model, and an outline of carrying out the research. In an original article, there's also a discussion and a biological interpretation of the results of the modelling, as well as of the clinical or theoretical conclusions.
- *Because original articles are always connected with present problems in a given field, they are a valuable source of the most up-to-date scientific facts, and reading them is advised before looking for subjects of one's own research.*

The characteristics of selected scientific works/papers

Medical articles can be of the following types:

- ***Review*** - the aim of this type of article is to carry out a review of the knowledge regarding a selected subject of study or a clinical problem. Exploring a given phenomenon requires many fragmentary studies published in original articles. Only a skilful synthesis of the conclusions resulting from those studies allows to create a cohesive exploration or decision model.
- *Review articles often show the gaps in present knowledge, indicating the directions for further research or indicating the discrepancies in published research results.*

The characteristics of selected scientific works/papers

Medical articles can be of the following types:

- ***Meta-analysis***

The reasons for creating these types of works/papers:

- A dynamic advancement in scientific research, the work of multiple research teams on solving the same scientific problem,
- Having many articles covering the same issue appear in medical literature,
- Assuming that the result of a single correctly carried out experiment is not enough to prove the reliability of the obtained conclusions,
- Original articles on the same scientific issue can present differing results (which results, then, are the "true" ones and which "false"?)
- Confirming the relationship between the observations by different scientific teams, allows to recognise a given model of the phenomenon as reliable enough

The characteristics of selected scientific works/papers

Medical articles can be of the following types:

- ***Meta-analysis***

Stages:

1.**A systematic review of literature** in order to gather all available articles on a selected research problem, and the assessment of the homogeneity of the published results. It's done through the use of databases of medical literature, inputting the appropriate search key (the key has to be the same as the researched issue, which guarantees the selection of the proper articles for systematic review).

2. **An evaluation of the quality of each publication according to the following criteria**:

- A clear goal of the experiment that was carried out,
- A precisely defined direction of observation and an outline of the research,
- Proper selection of models and statistical tests used to identify the described model,
- An adequate biological interpretation of the described results, which does not lead to over-interpretation.
- Fulfilling the above-mentioned requirements allows rejecting works/papers which do not fulfil the criteria of quality.

The characteristics of selected scientific works/papers

Medical articles can be of the following types:

- ***Meta-analysis***

Stages:

3. Analysis of the consistency of the published conclusions. If all works/papers point to the same quality conclusions, and the published quantitative results do not differ significantly between publications, one can perform a meta-analysis of them.

4**. Meta-analysis consists in an appropriate averaging of the results of numerous publications, as to obtain one "collective" result**. With a methodologically correct meta-analysis, the reliability of the "averaged model" can be greater than the reliabilities of the individual models described in the publications.

The characteristics of selected scientific works/papers

Scientific statements

these have the significance of a dissertation, as they herald one. They are published (presented orally) in short and quickly, at a time when the dissertation is still being worked on. Scientific statements allow defining (outlining) a problem, discussing the methods and expected results of the research, and above all, facilitate others' work, because they allow avoiding duplication of research. The development of science (scientific research) imposes a hastening of the spread of information, hence many scientific statements are not given review (they are spontaneous).

The characteristics of selected scientific works/papers

- **Scientific opuses and dissertations**

Scientific opuses and dissertations include the following:

- monographs,
- treatises,
- habilitation and doctorate theses,
- any theoretical and utilitarian works/papers at a high scientific level

Meaning : they integrate science, and on numerous occasions create the basis for new scientific fields and disciplines.

The characteristics of selected scientific works/papers

Qualification papers (theses):

- diploma,
- master's
- doctorate

Usually they are the result of carried out scientific research on an undertaken research problem under the guidance of a promoter.

In their essence, they are a specific kind of scientific work, because apart from the research assignment, they are also a test of the ability of the person wanting the diploma (a master's student, or a doctoral student) to use the knowledge and skills obtained during the course of the studies.

The structure of the process of gathering scientific knowledge

- A title page created in accordance with generally accepted patterns,
- a table of contents
- an introduction,
- a review of the present knowledge on the problem under study, based on literature,
- the research problem, arguments, hypotheses, methods, techniques, tools, and the organisation of the author's research
- analysis and presentation of research results,

- conclusions stemming from the research, ordered into groups of cognitive conclusions (theoretical) and practical conclusions,
- a summary of the report and translating it into English and other languages,
- references according to bibliography norms,
- bibliography (literature),
- appendixes (addenda).

The scientific method

1) The entirety of the scientific means for arriving at the truth and for a conceptual representation of the experienced truth

2) The means to gather the so-called scientific material (meaning: methods of action)

The method depends on the degree of generality of a problem. There are rules common to all sciences, but there are also rules important only to a narrow specialization.

The main constituents of the scientific method are:

a) stating the reasons regarding the problem (in light of the current achievements)
b) assumptions
c) determining the method of the research
d) the research
e) compiling the material
f) describing the results
g) conclusions

A frequent mistake:

starting the research, and only then determining the problem

Interpreting a text

1. **The subject of the so-called making an interpretation to be objective.** In making an interpretation objective, the main focus is on the researcher's study attitude (accordant with objectiveness).

The following are improper:

a) biased treatment of a given subject (for example, a political thesis woven into the interpretation from the start)

b) interweaving the reasoning with personal matters

c) prejudice (racial, national, and others)

d) overusing emotions (exclamations, slogans)

2. Pathology

Any interpretation can become pathological if the rules of proper conduct are not adhered to.

This can happen at various levels:

a) at the level of description (how one describes things)

b) at the meta-text level (aiming to unveil overarching rules)

c) at the functional level (what the purpose is)

An evaluation of scientific works/papers

1) The necessity for reviews

The necessity for reviewing scientific works/papers stems from the increased numbers of scientific literature.

2) The necessity for selecting works/previews. Scientific creativity is getting stronger but the capacity of the human mind remains constant. The answer to this could be progressive amateurishness or progressive hyper-specialization ; progress is possible thanks to specializing, but at the same time this brings various limitations. A remedy for this is, amongst others, a careful selection of the scientific products.

3) An objective evaluation of works/papers The evaluation of works/papers is connected with the types of works/papers (master's, Ph. D, habilitation). The review is an element of the strategy for equal chances and making evaluation objective.

The elements of reviewing a scientific publication:

1. A general description of the work/paper, including a discussion of its features, merits and flaws, and relations with similar works/papers.
2. A concise discussion of the contents of the work/paper.
3. An evaluation of the aim of the work/paper, including critique of the problem and the researcher's theory, assumptions and stated hypotheses,
4. An evaluation of the methodology used, including critique of the research methods, the outline of carrying out the research, and the statistical compilation of the research results.
5. An evaluation of the way the results are presented, including the format and quality of the tables, charts, and graphics.
6. An evaluation of the manner in which attitude is taken towards existing literature, and the results of the author's research are confronted with the results of other researchers, and an evaluation of the conclusions.
7. Critique of the logic of the statements, the syntax of the sentences, and the language used in the typescript.
8. An evaluation of the size of the scientific effort.
9. An evaluation and critique of the originality of the work/paper and its creative character, meaning what novelty does the work/paper bring into our knowledge base about a problem, in what way does it broaden the knowledge and/or verifies it, and what impact could it have on the scientific environment.

The concept of evaluation, the kinds and criteria of evaluation

- An evaluation should be rational, which means it has to be based only on arguments related to the adopted criteria (whether the work/paper meets or does not meet the indicated criteria).

The criteria:

a) logical value (conciseness, sufficient proof of statements [not "in good faith", without baseless hypotheses assumed as certainties, with make-believe and unclear justifications; in the humanities - indicating the authority to which one refers, and highlighting doubts], and objectiveness)

The most frequent defects are:

- formulating a single thought in multiple ways (talking about the same many times)
- an over-abundance of examples
- side digressions
- narration in the footnotes

b) *methodological value*

c) originality

d) social value (the author is not writing for themselves: the social role of science imposes a social goal; in relation to Polish studies works/papers, it is important that the research results have the possibility to be disseminated, and also to be given to review)

e) the size of the creative effort

f) the size of the work/paper; a work/paper does not have to have a specific number of pages - the volume of a work/paper should be established with the promoter; do not increase the volume by increasing the font, or making the spaces and margins bigger (in this matter, the rules defined for a given type of work/paper should be followed)

g) *language* correctness (in case of using words which have multiple meanings, and they are used as terms in the work/paper, one should stress how the term will be understood; the definitions of concepts should be found in the introduction)

h) *intelligibility of the lecture* (clarity of thoughts, conciseness ["verbal diarrhoea" - the sin of Polish language students, is not evidence of their skills in the Polish language], a clear structure of the work/paper; but on the other hand, a work/paper that is too concise and hermetic cannot be understood)

<u>The most frequent defects</u> are:

- "scholarship" which could have the effect of pseudo-scholarship
- overly long sentences,
- a nominal style

The style of scientific writing

1) **Avoid embellishment**
2) **Matteroffactness, including:**

a) avoiding the exposure of one's persona

b) synthesizing if possible (sins: boringness, over-extensiveness, or side digressions that have no significant relation to the main problem)

c) avoiding suggestibility (imposing own beliefs onto the recipient without enough justification for them)

d) semantic homogeneity

The style of scientific writing

3) **Language correctness, and language culture, including:**

a) a proper tone of the commentary (avoiding sarcasm, or pity, and the like)

b) avoiding rare non-specialization words

c) a proper magnitude of using foreign words

d) a proper magnitude of using profession-related terminology

Parametrization of scientific publications

Presently, in scientometrics there is a predominant multi-parameter system of evaluating the scientific activities of science workers and research facilities. The following should be mentioned amongst the many parameters which are evaluated:

- The number and quality of the scientific publications,
- The number of international and national patents and patent applications,
- Awards and scientific distinctions,
- Participation in research projects (mainly, directing such projects is considered),
- The number of promoted doctorate students,
- Membership in scientific societies,
- The number of statements (reports at scientific congresses).

However, the number and quality of scientific publications remains the most important evaluated parameter.

The significance of a publication depending on the type of publication

1. **The type of scientific publication.**

Original publications have the biggest meaning when an output is evaluated, they attest to not only the author's skill of preparing a proper publication but are also an indication of the skill of planning and the scientific level of the research that was carried out. Review publications and books are also a significant element of the scientific output. Congress statements play a marginal role in scientific output, similar to casuistic publications or letters to the editor.

The significance of a publication depending on the type of publication

2. Ranking scientific magazines.

2.1. The Impact Factor (IF)

Prestigious magazines are ones mentioned in the annual report published by the ISI – Institute for Scietific Information, Philadelphia, which counts the number of citations of articles published in individual magazines, the so-called Journal Citation Reports (JCR) (commonly known as the "Philadelphia list").

- The bibliometric measure for magazines found in the JCR database is the JCR index for a given magazine, that is the number of citations in the JCR year divided by the total number of articles published in the two previous years for a given magazine.
- The Impact Factor can assume values from 0 to a couple dozen points, which allows the quantitative evaluation of a magazine.

- **The usefulness of IF:**

- there is an assumption that the higher the IF of a magazine where an article is published, the more valuable the publication, meaning the greater the influence on and resonance with the scientific environment.
- A meticulous review process in an IF magazine ensures a high quality level of the papers (and the magazine),
- It is a tool for choosing a scientific journal as the place of publication of one's papers (a highly renowned magazine), which serves in significantly increasing the genre gravity of the author's output.
- Allows comparison of the scientific activity of individual scientists or institutions, however, under the condition that such comparisons are done for similar fields/disciplines of science, where papers from a similar IF range are published. Otherwise, such comparisons are not objective.

- **Reservations in using the IF**:

- Overuse of IF as a bibliometric measure,
- No correlation between IF, meaning the citationability of a set of articles in a given magazine, and the citationability of a single article in the same magazine.
- Major differences between IF values for a group of magazines, depending on the specialization/scientific discipline. Magazines representing dynamically developing disciplines, where many articles are published and cited, for example molecular biology, biochemistry, biotechnology, pharmacology, have an average IF greater than magazines publishing typically clinical papers. These differences become even more apparent when one compares biomedical magazines as an entirety with magazines representing exact sciences, the humanities, or economics.

It is advised to use the Impact Factor with some care and be aware that it is a measure of the quality of a scientific magazine.

2.2. The Science Citation Index (SCI) is the number of citations of a given article in other articles published during the year. It is a bibliometric measure characteristic to a specific article or a given scientist, and does not relate to a magazine like in the case of IF.

Scientists are postulating that the SCI should be an alternative measure of scientific activity to IF.

Critical remarks on the SCI:

- The number of citations is directly proportional to the value of an article. Papers are frequently cited due to their "usefulness" to the author of an article, and not necessarily due to an exceptional substantive level.
- Problems with the availability of source (original) papers, hence review papers are more frequently cited,
- auto-citations are common, also in situations where there is no factual justification for it.
- Some citation databases, Scopus or ISI WEB of Sciece for example, allow excluding auto-citations from the search results list.
- - there is a risk of multiple citations of controversial papers, burdened with errors in scientific discussion, and this does not result from their great substantive level, and yet it generates a high index of citations.

2.3. The *h*-index (Hirsch Index) is a bibliometric index introduced in 2005. The *h*-index is the number of scientific publications which received a number of citations equal to or greater than h. Example: An *h*-index = 10 means that 10 publications of a given author were cited at least 10 times. This index describes the entire output of a scientist, taking into consideration the meaningfulness (citationability) of all the publications of the author, and not the meaningfulness of a single chosen publication.

This index allows for a more comprehensive evaluation of the output in comparison with the citation index.

2.4. The MoSaHE score

The Ministry of Science and Higher Education score has a national-level reach. The register of magazines which have a MoSaHE score includes appendix A and appendix B.

Appendix A includes magazines indexed in the JCR database which were given an individual score of MoSaHE points from 13 to 32.

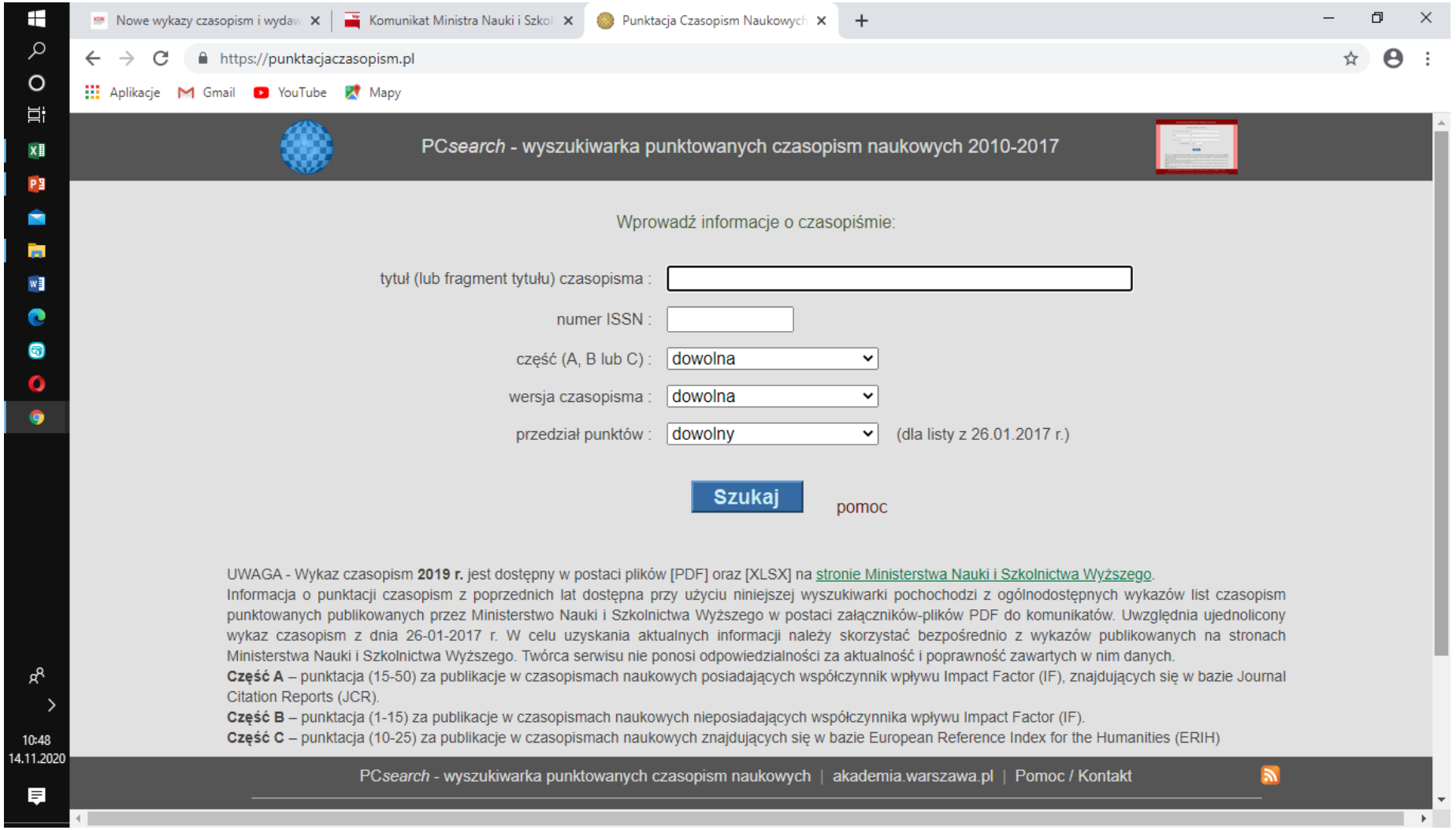
Appendix B includes selected Polish magazines and other magazines not indexed in the JCR database. The score for these magazines ranges between 1 and 9 points.

Currently this is a historical perspective (the above-mentioned analysis ceased being the basis for funding scientific entities in 2010).

Załącznik do komunikatu
Ministra Nauki i Szkolnictwa Wyższego z dnia 18 grudnia 2019 r.

WYKAZ
czasopism naukowych i recenzowanych materiałów z konferencji międzynarodowychwraz z przypisaną liczbą punktów

Lp.	Unikatowy Identyfikator Czasopisma	Tytuł czasopisma naukowego, numer ISSN oraz e-ISSN	Liczba punktów	Przypisane dyscypliny naukowe
1	1	2D Materials 2053-1583 (2D Materials 2053-1583)	140	architektura i urbanistyka; automatyka, elektronika i elektrotechnika; inżynieria biomedyczna; inżynieria lądowa i transport; inżynieria materiałowa; inżynieria mechaniczna; nauki farmaceutyczne; nauki chemiczne; nauki fizyczne;
2	2	3 Biotech 2190-572X 2190-5738 (3 Biotech 2190-572X 2190-5738)	70	architektura i urbanistyka; inżynieria biomedyczna; inżynieria chemiczna; inżynieria środowiska, górnictwo i energetyka; nauki farmaceutyczne; nauki o zdrowiu; rolnictwo i ogrodnictwo; zootechnika i rybactwo; nauki biologiczne;
3	3	3C Empresa 2254-3376	20	architektura i urbanistyka; nauki o zarządzaniu i jakości;
4	4	3c Tecnologia 2254-4143	20	inżynieria biomedyczna; inżynieria lądowa i transport; inżynieria mechaniczna; inżynieria środowiska, górnictwo i energetyka;
5	5	3C Tic 2254-6529	20	architektura i urbanistyka; inżynieria biomedyczna;
6	6	3D Printing and Additive Manufacturing 2329-7662 2329-7670 (3D Printing and Additive Manufacturing 2329-7662 2329-7670)	100	architektura i urbanistyka; automatyka, elektronika i elektrotechnika; inżynieria biomedyczna; inżynieria chemiczna; inżynieria materiałowa; inżynieria mechaniczna;


Nowe wykazy czasopism i wydaw
Komunikat Ministra Nauki i Szkol
Punktacja Czasopism Naukowych
https://punktacjaczasopism.pl
Aplikacje
Gmail
YouTube
Mapy
PCsearch - wyszukiwarka punktowanych czasopism naukowych 2010-2017
Wprowadź informacje o czasopiśmie:
tytuł (lub fragment tytułu) czasopisma :
numer ISSN :
część (A, B lub C) :
dowolna
wersja czasopisma :
dowolna
przedział punktów :
dowolny
(dla listy z 26.01.2017 r.)
Szukaj
pomoc
UWAGA - Wykaz czasopism 2019 r. jest dostępny w postaci plików [PDF] oraz [XLSX] na stronie Ministerstwa Nauki i Szkolnictwa Wyższego.
Informacja o punktacji czasopism z poprzednich lat dostępna przy użyciu niniejszej wyszukiwarki pochodzi z ogólnodostępnych wykazów list czasopism punktowanych publikowanych przez Ministerstwo Nauki i Szkolnictwa Wyższego w postaci załączników-plików PDF do komunikatów. Uwzględnia ujednolicony wykaz czasopism z dnia 26-01-2017 r. W celu uzyskania aktualnych informacji należy skorzystać bezpośrednio z wykazów publikowanych na stronach Ministerstwa Nauki i Szkolnictwa Wyższego. Twórca serwisu nie ponosi odpowiedzialności za aktualność i poprawność zawartych w nim danych.
Część A – punktacja (15-50) za publikacje w czasopismach naukowych posiadających współczynnik wpływu Impact Factor (IF), znajdujących się w bazie Journal Citation Reports (JCR).
Część B – punktacja (1-15) za publikacje w czasopismach naukowych nieposiadających współczynnika wpływu Impact Factor (IF).
Część C – punktacja (10-25) za publikacje w czasopismach naukowych znajdujących się w bazie European Reference Index for the Humanities (ERIH)
PCsearch - wyszukiwarka punktowanych czasopism naukowych | akademia.warszawa.pl | Pomoc / Kontakt
10:48
14.11.2020

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