VNIVERSITAT DE VALÈNCIA

Course Guide
33851 Bibliometrics

COURSE DATA

DATA SUBJECT

Code: 33851
Name: Bibliometrics
Cycle: Undergraduate Studies
ECTS Credits: 6
Academic year: 2026-27

STUDY (S)

Degree	Center	Acad. year	Period
1007 - Degree in Information and Documentation	Facultat de Geografia i Història	3	First quarter

SUBJECT-MATTER

Degree	Subject-matter	Character
1007 - Degree in Information and Documentation	Research foundations and methodologies	COMPULSORY

COORDINATION

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SUMMARY

Bibliometrics is a discipline based on the use of statistical and mathematical indicators, usually quantitative, in order to analyse the production and consumption of scientific literature. Bibliometrics has traditionally tried to describe and characterize the scientific system (size, organization, distribution etc.) and their social practices, identifying publication patterns and regularities. Recently, the evaluation of research has become the main focus topic in the field, and bibliometric indicators have been used as support and foundation for the planning of science policies. The aim of the course is to introduce the general concepts of bibliometrics and its historical evolution as a discipline, explain the laws and procedures for calculating the main bibliometric indicators and present applications of bibliometrics for the study and evaluation of scientific activity, describing the main databases offering bibliometric indicators and the existing software tools to perform this type of analyses.

PREVIOUS KNOWLEDGE

RELATIONSHIP TO OTHER SUBJECTS OF THE SAME DEGREE

There are no specified enrollment restrictions with other subjects of the curriculum.

OTHER REQUIREMENTS

Given the practical nature of the subject and the complexity of some of the concepts and notions the attendance of classes it is strongly recommended.

COMPETENCES / LEARNING OUTCOMES

1007 - Degree in Information and Documentation

Be able to analyse and interpret the information needs of actual and potential users, and to provide and organise the resources needed to ensure their satisfaction both with the information received and with their interaction with the information professional.

Be able to detect the patterns of production and consumption of information in different areas (scientific, professional, business, citizen) and recognise the sources and resources of information available to assist users in their search for information.

Be able to identify, authenticate and evaluate information sources and resources.

Be able to identify the strengths and weaknesses of an information service, system or product by establishing and using evaluation indicators and developing solutions to improve their quality.

Be able to learn independently.

Be able to search and retrieve information by methods that meet the expectations and needs of users in optimal conditions of cost and time.

Be able to work in a team and to integrate into multidisciplinary teams.

Capacity to write analytical reports and summaries with regard to management and organisation of information.

Demonstrate organisational and planning skills.

Have computer skills related to the field of study.

Have decision-making capacity.

Have oral and written communication skills in one's own language.

Have problem-solving skills.

Have skills for information management.

Know a foreign language.

Show commitment to the principle of equal opportunities for men and women.

DESCRIPTION OF CONTENTS

1. Unit 1. Introduction to bibliometrics.

In the Unit 1 we will address the following contents:

- Concept of Bibliometrics and other "metrics" fields.
- History of the discipline.
- Bibliometrics in Spain.

2. Unit 2. Sources of information for bibliometric studies.

In the Unit 2 we will address the following contents:

- Objectives of bibliometrics.
- Sources of information for the development of bibliometric studies.
- Bibliometric indicators.
- Basic principles of bibliometrics.

3. Unit 3. Descriptive studies of the scientific literature.

In the Unit 3 we will address the following contents:
- The growth of scientific literature.
- The aging or obsolescence of scientific literature.
- The dispersion of the scientific literature.

4. Unit 4. Sociometric analyses of the scientific literature.

In The Unit 4 we will address the following contents:

- Productivity of the authors.
- The scientific collaboration.
- The visibility and impact of scientific papers.
- Science as a social system.

5. Unit 5. Applications and limitations of bibliometric indicators.

In the Unit 5 we will address the following contents:

- Applications of bibliometric indicators.
- Limitations of bibliometric indicators.
- Software tools to carry out bibliometric studies.

WORKLOAD

PRESENCIAL ACTIVITIES

Activity	Hours
Theory	45,00
Computer classroom practice	15,00
Total hours	**60,00**

NON PRESENCIAL ACTIVITIES

Activity	Hours
Attendance at other activities	0,00
Individual or group project	35,00
Independent study and work	40,00
Preparation of lessons	5,00
Preparation for assessment activities	10,00
Resolution of case studies	0,00
Total hours	**90,00**

TEACHING METHODOLOGY

The teaching and learning of the course combine lectures where theoretical contents are exposed, with individual practices in the computer laboratory to solve applied problems.

These activities will be complemented by the performance group and subsequent public presentation of a course work, in which a plan of bibliometric study will be developed; as well as reading and subsequent individual public exposure of a bibliometric English research article. It was also assessed as an irreplaceable part of the note attendance and class participation.

Students have three hours of weekly attendance tutorials, which can turn to answer any question relating to the subject. Students can also use the system of virtual tutorials.

EVALUATION

The evaluation process will be based on two sections: a final exam on the theoretical and practical program exposed in the theoretical classes (accounts for the 50% of the final mark); and computer laboratory exercises, course work, presentation of English
scientific research paper and attendance and delivery of classroom practices and reading and discussion activities (50% of the final mark). To obtain a mark of at least 5 out of 10 points in final written exam is an essential condition to pass the course. The only recoverable aspect of the final grade of the course in the second evaluation period is the final exam.

FINAL EXAM.

The final exam will consist of multiple choice questions, short theoretical questions or development and solving of practical exercises about the contents of the course. It is an essential condition to obtain a mark

of at least 5 out of 10 points in final written exam to pass the course.

PRACTICAL EXERCISES IN COMPUTER LABORATORY.

In practical computer exercises applied for resolution to be delivered individually at the end of the class they will arise. No activity will be allowed to be handed in after the end of the corresponding practical class.

COURSE WORK.

It should develop and present in class for a period of 15 minutes a course work developed in groups of two to four people, in which a plan to develop a bibliometric study should be carry out. The contents to be included in the work are the following:

- Work title.
- Justification of the chosen topic.
- Methodology.
    - This section includes the following contents: sources of information; how information processing is carried out; bibliometric indicators to be obtained; other methodological considerations.
- Discussion.
    - Exhibition of literature susceptible of being used to discuss and comparatively analyse the results.
- Publication.
    - Justified assessment of how the journal or broadcast medium for the publication of the work is selected.
- Final considerations that may be necessary for the performance of work.

This work, with the sections indicated, should be presented in the form of text and each group shall anonymously evaluate the presentations made by the other groups according to an evaluation criteria form. Also each student anonymously will evaluate the work done in the group for the rest of his teammate's basis for this at evaluation criteria previously indicated. Failure to choose and communicate the topic of the work within the deadline indicated by the teacher or failure to present the work on the date indicated will result in a mark of zero for the activity.

IDENTIFICATION OF SCIENTIFIC EVIDENCE FROM RESEARCH ARTICLES

Students will have to identify and synthesise the existing scientific evidence on a subject related to Bibliometrics collected in research articles in English, using artificial intelligence tools, presenting the results orally.

Both the theme of course work as English research paper should have been agreed with the teacher by attending tutorial periods established. Failure to choose and communicate the article for its presentation within the deadline indicated by the teacher or failure to present it on the date indicated will result in a grade of zero for the activity.

COURSE READING

It will consist of reading a book related to the subject matter and carrying out an evaluation test or exercises related to its contents.

ASSISTANCE, PARTICIPATION IN CLASS AND READING AND DISCUSSION ACTIVITIES.

It was also evaluated as part of the final mark, the overall attendance and active participation in class and submission of assignments, including practical exercises developed in class, reading and discussion activities proposed. No practical class work will be accepted after the end of the corresponding class.

USE OF GENERATIVE ARTIFICIAL INTELLIGENCE APPLICATIONS TO CARRY OUT THE ACTIVITIES TO BE GRADED

The use of generative artificial intelligence tools is allowed for the activities course reading, course work and identification of scientific evidence, although it must comply with the specific conditions that are detailed in the appendix of the teaching guide that describes how to perform each of these activities and that will be available in the virtual classroom of the subject. Failure to comply with these conditions will lead to a mark of 0 for this activity, as well as, if applicable, the proposal to initiate the appropriate sanctioning procedures set out in the regulatory provisions associated with academic fraud.

The distribution of grades of the activities carried out during the course (50% of the grade) will be distributed as follows:

- Computer classroom practices: 10% of the grade.
- Course work: 10% of the grade
- Oral presentation of scientific article: 5% of the note.
- Course reading: 5% of the grade.
- Attendance and delivery of class activities: 20% of the grade.

In the second call only the grade corresponding to the final exam of the subject can be recovered. Likewise, activities delivered after the deadline will not be qualified; and activities with plagiarized content will be rated with a zero.

This assessment starts from the premise that teaching at the University of Valencia is, by definition, on-campus lecture delivery method. In this sense, the student should be aware that attendance at both the theoretical and practical lectures is essential for proper monitoring of the contents of the course. The student must also consider the possibility to enroll part time when it is unable to attend all courses (60 credits). However, there is an exception for those students that justify it and request it. They have the possibility of being assessed without attending to all or part of the lectures. For these cases, students should proceed as follows:

- At the beginning of the course, student should inform to lecturer responsible for the course, the incidence that makes her/him unable to attend the class. This must be adequately justified in

documentary form.
- The lecturers in charge, in the light of this information, will decide the possibility of evaluation without full or partial assistance to the lectures.

Students who are in this situation must submit for evaluation all work required by the lecturer (not necessarily the same to those required for the course) and may also be called to defend them orally to the lecturer, and conduct a knowledge test. The weight of the final grade work will be 50% and the test the remaining 50% knowledge.

Regarding the obligations that students have when using AI in assessable activities, and concerning the declaration of responsible AI use, please refer to the "Guidelines for the Responsible Use of Artificial Intelligence (AI) in Teaching and Assessment Activities at the University of Valencia" at the following link: https://www.uv.es/graus/normatives/Guia_actuacio_IA_UV.pdf.

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