Universitat Autònoma de Barcelona

2022/2023

Major Issues of History of Science

Code: 42280
ECTS Credits: 15

Degree	Type	Year	Semester
4313223 History of Science: Science, History and Society	OT	0	1

Contact

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Use of Languages

Principal working language: catalan (cat)

Other comments on languages

There could be some session in Spanish and some session in English

Teachers

Agustí Nieto Galan
Jorge Molero Mesa
Jaume Sastre Juan
Miquel Carandell Baruzzi
Silvia Cora Levy Lazcano
Monica Balltondre Pla

External teachers

Daniele Cozzoli (UPF)
Emilia Calvo (UB)
Jaume Valentines Álvarez (UNL)
Jesús Galech (UB)
Jon Arrizabalaga (CSIC)
Maria Rosa Massa (UPC)
Oliver Hochadel (CSIC)
Stefan Pohl
Tayra Lanuza-Navarro

Prerequisites

It is a mandatory module in the research (academic) itinerary. It trains the students for the research modules (M5 + M9) of the second semester.

Objectives and Contextualisation

How to write the History of Science at the beginning of the 21st century? To answer this complex question, the module provides students with a critical approach to the different schools, themes and problems on which the history of science has been working as an academic discipline. It invites students to draw useful conclusions for their education as historians of science today. It is a *historiographical* module, in which plural views of a specific event in the past have priority over consensus -the latter being worked in module M1.

Competences

- Analyse the multiple approaches to science's past taken by different authors and schools, and make reasoned choices between them.
- Apply historical knowledge of science to communication, material culture and science teaching.
- Apply this discipline's own analysis methods and techniques in the construction of various historical narratives.
- Develop an original, interdisciplinary historical narrative that integrates humanistic and scientific culture.
- Display a sound knowledge of history so as to pinpoint the great events of the past with accuracy: authors, theories, experiments, practices, etc., and their stages of stability and transformation.
- Gather and critically assess information for problem solving, in accordance with the discipline's own analysis methods and techniques.
- Interpret, comment on and edit scientific texts on science's past and place them rigorously within their historical context.
- Use acquired knowledge as a basis for originality in the application of ideas, often in a research context.
- Use information and communication technologies appropriately in research and in professional activity.
- Work in interdisciplinary teams, showing leadership and initiative.
- Work independently: solving problems, taking decisions and making innovative proposals.

Learning Outcomes

1. "Identify areas of intersection between humanistic and scientific culture: science and religion; science and power; science and technology; science and gender."
2. Adopt knowledge advanced historiography science.
3. Analyse the historical dimension of a particular scientific theory from a cultural and social perspective.
4. Analyze a certain scientific theory in its historical dimension from a cultural and social perspective.
5. Construct a critical bibliography on a particular problem in the history of science, using databases and directories.
6. Correctly deconstruct footnotes when analysing the intellectual itinerary of a particular author in order to ascribe the author to a particular historiographic school.
7. Critically analyse the different schools of science historians that have arisen throughout in the 20th century: positivism, historicity, sociology.
8. Critically analyse the historical moments of change, transformation and even revolution in scientific thought.
9. Describe the great experiments in the history of science as seen in their historical context.
10. Develop various historical narrations (multiple approaches) of a single event in the science of the past.
11. Display methodological habits in commentaries on representative texts of the main historiographic schools .
12. Distinguish the great figures in the history of science as seen in their historical context.
13. Distinguish the main changes that have taken place in the history of science before and since the contribution of Thomas S. Kuhn.
14. Distinguish the recent historiographic trends that regard science as a cultural phenomenon of knowledge in transit.
15. Evaluate the contribution of the great paradigms the history of science: heliocentrism, geocentrism, creationism, evolutionism, etc.
16. Gather and critically assess information for problem solving, in accordance with the discipline's own analysis methods and techniques.
17. Integrate intellectual and material factors (internal and external) when developing a historical narrative of science.

18. Integrate new primary sources (scientific instruments, spaces of scientific practice, machines, etc.) as agents of a new social and cultural history of science.
19. Place secondary sources within the historical context in which they were written, disseminated and responded to.
20. Present the state of the art of a particular historiographic problem by identifying and analysing the relevant literature.
21. Relate these new material sources to the traditional textual primary sources.
22. Rigorously contextualise and analyse the different secondary sources.
23. Use acquired knowledge as a basis for originality in the application of ideas, often in a research context.
24. Use information and communication technologies appropriately in research and in professional activity.
25. Work in interdisciplinary teams, showing leadership and initiative.
26. Work independently: solving problems, taking decisions and making innovative proposals.
27. Write critical analyses of representative works in the history of science.

Content

The course is organized in two blocks:

A. Methodology and development of the discipline: introduces the student into the bibliography, approaches and research methodology in the history of science. It also provides an overview of the development of the discipline throughout the 20th century.

B. Topics and problems: explores the relationship of science with certain issues and border problems, from a historiographic perspective.

A. METHODOLOGY AND DEVELOPMENT OF THE DISCIPLINE

1 Presentation. The history of science as an academic discipline: Tools and resources.

2 The origins of the history of science: Sarton

3 The first sociology: Merton

4 The origins of the history of science: Koyré

5 Thomas Kuhn and the Cold War

6 The sociological turn

7 Synthesis session. Text criticism

Preparation of the first exercise

B. THE HISTORY OF SCIENCE: TOPICS AND PROBLEMS

8 Human Sciences

9 Medicine

10 Environmental history

First essay delivery

11 Genre (I)

12 Genre (II)

13 Art

14 Religion

15 Mathematics (I)

16 XVII Meeting of the Catalan Society for the History of Science and Technology (SCHCT), City of Palma, 17, 18 and 19 November

https://17-thct.iec.cat/

17 Mathematics (II)

Second essay delivery

18 Technology

19 Technology

20 Follow-up session of the historiographical essay. Oral presentation of the reading chosen for the final essay

21 Global history

22 HPS

23 Early Modern Science

24 Latin America

25 Audiences

26 Urban History

27 Boundaries

28 Diplomacy

29 Cultural Hegemony

30 Final synthesis session

Third essay delivery

Methodology

The teacher prepares a series of readings that are later discussed in presentations and class discussions.

The student writes a historiographical essay throughout the module based on weekly readings and debates.

Students write three essays related to various topics in the module.

Autonomous bibliographic research also allows the student to know a certain state of the issue in topics and problems in the history of science of interest.

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Master classes	94	3.76	1, 8, 7, 15, 2, 9, 10, 13, 12, 3, 17, 16

Type: Supervised			
Oral presentations and mentoring	46	1.84	1, 8, 7, 15, 5, 2, 6, 9, 10, 13, 12, 20, 3, 17, 26, 25
Type: Autonomous			
Personal study, reading, analysis of articles and elaboration of written assignments	225	9	1, 8, 7, 15, 5, 2, 6, 9, 10, 13, 12, 20, 3, 17, 16, 26, 25, 24

Assessment

The module provides the student with a work methodology that he must be able to develop throughout the master's degree. After the corresponding tutoring, the student will choose a possible author of the historiographical essay. He/she will also develop his/her historiographical skills through exercise 1 (classic), exercise 2 (a Companions / Readers topic) and exercise 3 (specialized article). The coordinator will assign each student a tutor teacher who will guide him/her in the preparation of the historiographical essay.

The evaluation will be carried out based on the following exercises:

Excercises	
First exercise: Historiographical commentary on a classic text from block A: A classic text from some of the authors (or their schools) from blog A (Sarton, Koyré, Merton, Kuhn, etc.) will be assigned, which will have to be commented on individually. criticism in a text of 1000 words, presented in a previously defined format Delivery: 20-10-2022	15%
Second exercise: Historiographic commentary on a Companion/Reader article: A specialized article on one of the topics that appears in the Companions/Readers (Olby et al., Hessenbruch, Heilbron, Lightman) will be assigned, which will have to be critically commented on. in a text of 1000 words, presented in a previously defined format. Delivery: 22-11-2022	15%
Third exercise: Historiographical commentary on an article in block B: A specialized article will be assigned on one of the topics that appear on blog B, which will have to be critically commented on in a 1,000-word text, presented in a previously defined format. Delivery: 01-26-2023	15%
Oral presentation of the monograph chosen for the historiographical essay. Brief presentation of the author, the main ideas of the work and the historiographic positioning of the book. Exercise in the classroom on the day: 12-13-2022	20%

Writing a 5,000-word historiographical essay. The essay will focus on the analysis of the work of a certain author and his contribution to the historiography of science. You have to choose one of the works that we propose in the appendix. 35%

The essay must start from the author's presentation (500 words) and a summary of the reading (1000 words) to reach the identification and historiographical discussion of the work (3500 words). Once the historiographical positioning of the work has been located with a reasoned discussion, it is necessary to compare it with other approaches to the same subject (placing them in time) and make a reasoned criticism: see what implications this historiographical approach has, how it is constructing its object of study. , methodological problems that it presents, etc.

We will provide a model article to follow for formal questions in the preparation of the essay. The formal and linguistic correction will count in the final grade of the exercise.

Delivery: 02-03-2023

If a student does not pass some of these exercices, he or she can present a revised version at the end of the module. Oral presentations are not subject to this possibility.

In case that tests or exams cannot be taken onsite, they will be adapted to an online format made available through the UAB's virtual tools (original weighting will be maintained). Homework, activities and class participation will be carried out through forums, wikis and/or discussion on TEAMS, etc. Lecturers will ensure that students are able to access these virtual tools, or will offer them feasible alternatives.

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Elaboration of an historiographical essay	35%	2	0.08	1, 8, 7, 5, 22, 2, 11, 9, 10, 13, 14, 20, 3, 17, 18, 16, 21, 26, 19
Essay of a classic text of block A	15%	2	0.08	7, 15, 2, 13, 12, 27, 16, 26
Essay of a paper of block B	15%	2	0.08	2, 11, 13, 14, 3, 17, 23, 25
Historiographic essay from an article of a Companion/Reader	15%	2	0.08	7, 15, 2, 13, 12, 16, 26
Oral presentation	20%	2	0.08	4, 22, 6, 14, 18, 21, 26, 19, 24

Bibliography

DATABASE "HISTORY OF SCIENCE, TECHNOLOGY AND MEDICINE"

The UAB has a subscription to the database "History of Science, Technology and Medicine", which includes the bibliographic database of the journal ISIS and the History of Science Society (HSS). We have 4 simultaneous accesses. You can access from outside the campus in the following way:

1) Access the UAB Private Virtual Network http://xpv.uab.cat/ using your NIU and password

2) Click on "Biblioteques" in order to access the website of the Library Services of the UAB

3) Search "History of Science and Technology" in the Catalog of the UAB. Among the results you will find:

History of science, technology, and medicine [Recurso electrónico]

4) Click on this reference and you will find the direct link to the database.

Bibliography

Companions/Readers/Diccionaries/Big pictures

BYNUM, William F. & Roy PORTER (eds.) (1993). *Companion Encyclopedia of the History of Medicine*. London: Routledge, 2 vols.

BYNUM, William F.; BYNUM, Helen (eds.) (2006). *Dictionary of Medical Biography*. Westport: Greenwood, 5 volumes.

GILLESPIE, Charles (ed.) (1970/90). *Dictionary of Scientific Biography*. New York: Charles Scribner's Sons.

(*)HEILBRON, John L. (ed.) (2003). *The Oxford Companion to the History of Modern Science.* Oxford: Univ. Press.

BIAGIOLI, Mario (ed.) (1999). *The Science Studies Reader*. New York: Routledge.

HACKETT, Edward J. et al., eds., T*he Handbook of Science and Technology Studies*, 3ª ed., Cambridge, MA: MIT Press.

(*)HESSENBRUCH, Arne (ed.) (2000). *Reader's Guide to the Historry of Science. London:* Fitzroy Dearbour.

(*)LIGHTMAN, Bernard V., A *Companion to the Historyof Science*. Chichester: Wiley Blackwell, 2016

PATTON, Lydia (ed.) (2014). *Philosophy, Science, and History: A Guide and Reader*. New York: Routledge.

(*)OLBY, Robert; Geoffrey CANTOR; John CHRISTIE; Jonathan HODGE, eds. (1990) *Companion to the History of Modern Science.* London: Routledge.

The Cambridge History of Science. Cambridge: Cambridge University Press, 8 vols.

PESTRE, Domique (ed.) (2015). *Histoire des sciences et des savoirs*. Paris: Seuil, 3 vols.

Historiography

DOEL, Ronald E., SÖDERQVIST, Thomas (2006). *The Historiography of Contemporary Science, Technology, and Medicine: Writing Recent Science,* London: Routledge.

FOX, Robert, KOKOWSKI, Michał, "Historiography of Science and Technology in Focus. A Discussion with Professor Robert Fox." *Studia Historiae Scientiarum* 16 (2017): 69-119.

GAVROGLU, Kōstas, CHRISTIANIDIS, Jean., NICOLAIDIS, E. *Trends in the Historiography of Science*. Dordrecht ; London: Kluwer Academic, 1994.

GAVROGLU, Kostas (2007). *O Passado das Ciências como História*. Porto: Porto Editora.

GRAHAM, L. W. LEPENIES, P. WEINGART (eds.) (1987). *Functions and Uses of Disciplinary Histories*. Dordrecht: Springer.

GOLINSKI, Jan (1998). *Making Natural Knowledge. Constructivism and the History of Science*. Cambridge University Press.

KRAGH, Helge (1989; 2007). *Introducción a la historia de la ciencia.* Barcelona: Crítica.

SOLÍS, Carlos (ed.) (1994). *Razones e intereses. La historia de la ciencia después de Kuhn*. Barcelona: Paidós.

SOLÍS, Carlos (ed.) (1998). *Alta tensión: historia, filosofía y sociología de la ciencia. Ensayos en honor de Thomas S. Kuhn*. Barcelona: Paidós.

Historiographic Essay

Choose a book ib the following list, which includes prestigious history of science works since the 1960s:

Award-Winning Books - History of Science Secondary Sources by Type - LibGuides at The University of Oklahoma Libraries

Software

Any special sofware is requiered.