UAB
Universitat Autònoma de Barcelona

Major Issues of History of Science

Code: 42280
ECTS Credits: 15

2024/2025

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

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Teachers

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Teaching groups languages

You can view this information at the end of this document.

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

Presentation. The history of science as an academic discipline: Tools and resources.
The origins of the history of science: Sarton
The origins of the history of science: Koyré
The first sociology: Merton
Thomas Kuhn and the Cold War
The sociological turn
Textual critique session

B. THE HISTORY OF SCIENCE: THEMES AND ISSUES

Medicine (I)
Gender (I)
Gender (II)

Medicine (II)

Mathematics (II)

Technology (I)
Technology (II)
Art
Religion
Humanities
Environmental history
Follow-up session on historiographic essay. Oral presentation of the chosen book for the final essay
Global history
HPS (History and Philosophy of Science)
Early Modern Science
Publics of Science

Mathematics (II)
Urban history
Boundaries
Cultural hegemony
Final synthesis session

Activities and Methodology

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

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.

Assessment

Continous Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Essay of a classic text of block A	20%	2	0.08	7, 15, 2, 13, 12, 27, 16, 26
Essay on an iHC seminar	20%	2	0.08	2, 11, 13, 14, 3, 17, 23, 25
Historiographical essay	40%	3	0.12	1, 8, 7, 5, 22, 2, 11, 9, 10, 13, 14, 20, 3, 17, 18, 16, 21, 26, 19

Oral presentation	20%	3	0.12	4, 22, 6, 14, 18, 21, 26, 19, 24

The module provides students with a working methodology that they must be able to develop throughout the master's program. After the corresponding tutoring, the student will choose a possible author for the historiographic essay. They will also develop their historiographic skills through Exercise 1 (classic), Exercise 2 (seminar iHC), and Exercise 3 (specialized article). The coordinator will assign each student a tutor who will guide them in the preparation of the historiographic essay.

The evaluation will be based on the following activities:

First exercise: Historiographic commentary on a classic text from Block A:
A classic text by some of the authors (or their schools) from Block A will be assigned (Sarton, Koyré, Merton, Kuhn, etc.). In a 1000-word text, it is necessary to position it in relation to the historiographic currents of Block A. 20%

Second exercise: Historiographic commentary on an iHC seminar.
You must choose a seminar/lecture from the iHC activity program and critically explain its content and historiographic approach. In a 1000-word text, it is necessary to relate the content of the article to some of the themes and issues that have appeared in the module sessions. 20%

Oral presentation of the chosen monograph for the historiographic essay. Brief presentation of the author, the main ideas of the work, and the historiographic positioning of the book. 20%

Writing of a historiographic essay with a length of 5000 words. The essay will focus on the analysis of the work of a specific author and their contribution to the historiography of science. You must choose one of the works proposed in the appendix.

The essay should start with the author's presentation (500 words) and a summary of the reading (1000 words) to then reach the historiographic identification and discussion of the work (3500 words). Once the historiographic positioning of the work is established through reasoned discussion, it is necessary to compare it with other approaches to the same topic (placing them in time) and provide a reasoned critique: see the implications of that historiographic approach, how it is constructing its object of study, the methodological problems it presents, etc.
We will provide a model article that should be followed for formal matters in the essay's elaboration. Formal and linguistic correctness will be taken into account in the final grade of the exercise. 40%

To participate in the recovery, students must have submitted the 5000-word essay (40%) and 1 exercises (20%), and obtain a final average grade of 3.5.

On carrying out each evaluation activity, lecturers will inform students (on Moodle) of the procedures to be followed for reviewing all grades awarded, and the date on which such a review will take place.

Students will obtain a Not assessed/Not submitted course grade unless they have submitted more than 1/3 of the assessment items.

In the event of a student committing any irregularity that may lead to a significant variation in the grade awarded to an assessment activity, the student will be given a zero for this activity, regardless of any disciplinary process that may take place. In the event of several irregularities in assessment activities of the same subject, the student will be given a zero as the final grade for this subject.

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

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

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.

HARDING, Sandra G. (2011) *The Postcolonial Science and Technology Studies Reader*. Durham: Duke University Press.

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

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

JASANOFF, Sheila et al. (ed.) (1995) Handbook of Science and Technology Studies. Sage: Thousand Oaks.

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

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

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

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

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

Historiography

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.

GILLISPIE, Charles C. (2007*) Essays and Reviews in History and History of Science.* Philadelphia: American Philosophical Society.

GOLONSKI, 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.

SCHAFFER, Simon (2010). Trabajos de cristal*. Ensayos de historia de la ciencia, 1650-1900*. Madrid: Marcial Pons.

SIMÕES, Ana; ARABATZIS, Theodore; RENN, Jürgen (eds) (2015) Relocating the History of Science: Essays in Honor ofKostas Gavroglu. Dordrecth: Springer.

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.

For the Historiographical Essay:

Choose a book (nota a paper) among the following lists:

https://hssonline.org/page/honorsawards

https://www.historyoftechnology.org/about-us/awards-prizes-and-grants/sidney-edelstein-prize/

https://www.historyoftechnology.org/about-us/awards-prizes-and-grants/the-sally-hacker-prize/

https://www.4sonline.org/4s_prizes.php

Software

Any special sofware is requiered.

Language list

Name	Group	Language	Semester	Turn
(TEm) Theory (master)	1	Catalan	first semester	afternoon