Universitat Autònoma de Barcelona

2019/2020

From Frankenstein to Einstein: Contemporary Science and Society

Code: 42286
ECTS Credits: 15

Degree	Type	Year	Semester
4313223 History of Science: Science, History and Society	OT	0	2

Contact

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Use of Languages

Principal working language: catalan (cat)

Other comments on languages

Llengua majoritària de les lectures del mòdul.

Teachers

Antoni Malet Tomás

Agustí Nieto-Galan

Daniele Cozzoli

Silvia de Bianchi

Tatiana Kasperski Tatiana

Prerequisites

There are none.

Objectives and Contextualisation

To understand and critically analyze the role of science and technology in today's society, taking into account the historical processes that have shaped them.

To identify the different forms that contemporary science has taken, considering its aims, practitioners, educational institutions.

To get acquantied with the relevant literature on these issues.

To communicate orally and in writing scientific and historical arguments.

Competences

- Analyse the multiple approaches to science's past taken by different authors and schools, and make reasoned choices between them.
- 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.
- Display rigorous, advanced knowledge of the evolution of science throughout history.
- Gather and critically assess information for problem solving, in accordance with the discipline's own analysis methods and techniques.
- Use acquired knowledge as a basis for originality in the application of ideas, often in a research context.
- Work in interdisciplinary teams, showing leadership and initiative.
- Work independently: solving problems, taking decisions and making innovative proposals.

Learning Outcomes

1. Analyse in depth, from the global perspective of the module, transformative contributions such as evolution or relativity, offering an up-to-date reading in line with recent historiography.
2. Analyse particular cases of construction of the public image of science and its cultural and symbolic value.
3. Analyse the transformation, over the last century, of relations between experts and non-experts in the field of science, with regard to the legal and political dimension of these relations.
4. Connect the studies and debates on contemporary science and technology to those of political, cultural, economic and environmental history.
5. Contextualise the main historiographic debates on science and technology in the contemporary period.
6. Discuss how the boundaries between disciplines in science are marked out and maintained and the relationship with technology and other areas of human activity, such as philosophy or literature.
7. Distinguish the forms adopted by scientific activity throughout this period, both from the institutional and from the social and economic perspectives.
8. Explain the most significant changes in the different branches of scientific knowledge in the contemporary period.
9. Gather and critically assess information for problem solving, in accordance with the discipline's own analysis methods and techniques.
10. Identify and distinguish the changes that have taken place in the last two centuries in the ways scientific knowledge is produced, especially the role of the State as a patron and protector of scientific activity.
11. Recognise the specific contribution and role of industry and technology in the evolution of science, and vice versa.
12. Recognise the ways in which the changes in the relations between science, the state and industry have been reflected or enacted in the public arena and in the different artistic and communicative formats.
13. Reflect on narrative modes and the critical use of sources in the history of contemporary science and technology.
14. Use acquired knowledge as a basis for originality in the application of ideas, often in a research context.
15. Work in interdisciplinary teams, showing leadership and initiative.
16. Work independently: solving problems, taking decisions and making innovative proposals.

Content

1. Presentation

2. The origins of modern science

3. Frankenstein, or the Modern Prometheus

4. Darwin and the historical vision of life

5. Scientific Empires

6. Natural-artificial: industrial chemistry and German hegemony

7. Science and ideology in the age of extremes

8. Science and ideology: the case of Nazism

9. Social darwinism

10. Eugenics

11. Marie Curie, science, medicine, and industry

12. Einstein and the construction of a scientific icon

13. Science and art

14. Science and literature

15. Science and modernization: Spain 1900-1936

16. Science in a totalitarian regime: Spain 1939-1975

17. Two cultures?

18. Peniciline: research, patents and the Cold War

19. Space sciences in the Cold War

20. John von Neumann and computation

21. Technology and nation

22. Resistance to technology

23. Elementary particles and cosmology

24. Epistemology of contemporary scientific practice

25. Gender and contemporary science

26. Earth sciences and the representation of the planet

27. Science in the media

28. Science and democracy

29. Little science

30. Conclusions

Methodology

The module combines lectures in seminar format with the student autonomous, directed work (reading and analysis of texts).

The lectures will consist of an introduction by the teacher, followed by the presentation by the students of the texts proposed for the session, and the discussion and comment of these readings.

Readings will be available on the UAB Virtual Campus.

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			

Lectures	93	3.72	1, 3, 2, 4, 5, 6, 7, 8, 10, 11, 12, 13, 14
Type: Supervised			
Supervision of essays	40	1.6	1, 3, 2, 4, 5, 6, 7, 8, 10, 9, 11, 12, 13, 14, 16, 15
Type: Autonomous			
Student work	212	8.48	9, 14, 16

Assessment

The module will be evaluated on the basis of 5 short essays (one every six sessions), with a weight of 15% each and addressed to different lecturers; and 2 oral presentations. The final grade will be the average of the grades obtained in the different activities.

The essays will have an extension of 1500 words and will be presented through the Campus Virtual , within the indicated deadlines. The essays will be evaluated in two weeks, and the student will receive the feedback through the same Campus Virtual.

The presentations will be prepared in advance and delivered in the corresponding session. The student will base the presentation on the session's readings.

In order to be evaluated, all essays and presentation must be done. If a student does not pass one of the essays, he or she can present a revised version at the end of the module. Oral presentations are not to be revised.

Any additional indication will be provided through the Campous Virtual, which is the primary tool for communication and file sharing of the module.

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Essay 1	15%	4	0.16	1, 3, 2, 4, 5, 6, 7, 8, 10, 9, 11, 12, 13, 14, 16, 15
Essay 2	15%	4	0.16	1, 3, 2, 4, 5, 6, 7, 8, 10, 9, 11, 12, 13, 14, 16, 15
Essay 3	15%	4	0.16	1, 3, 2, 4, 5, 6, 7, 8, 10, 9, 11, 12, 13, 14, 16, 15
Essay 4	15%	4	0.16	1, 3, 2, 4, 5, 6, 7, 8, 10, 9, 11, 12, 13, 14, 16, 15
Essay 5	15%	4	0.16	1, 3, 2, 4, 5, 6, 7, 8, 10, 9, 11, 12, 13, 14, 16, 15
Presentation 1	12,5%	5	0.2	1, 3, 2, 4, 5, 6, 7, 8, 10, 9, 11, 12, 13, 14, 16, 15
Presentation 2	12,5%	5	0.2	1, 3, 2, 4, 5, 6, 7, 8, 10, 9, 11, 12, 13, 14, 16, 15

Bibliography

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