Universitat Autònoma de Barcelona

2023/2024

Physics and Contemporary Thought

Code: 106232
ECTS Credits: 6

Degree	Type	Year	Semester
2504235 Science, Technology and Humanities	OB	3	1

Contact

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Teaching groups languages

You can check it through this link. To consult the language you will need to enter the CODE of the subject.
Please note that this information is provisional until 30 November 2023.

Prerequisites

There are none.

Objectives and Contextualisation

The main objective of the course is to understand the relationship between physics and other areas of contemporary humanistic thought, especially philosophy. To this end, we will analyse:
1) The foundations and implications of humanistic reasoning about physics.
2) The relevance of physical concepts and experiences for philosophical reasoning.
3) The limits and redefinition of the shifting boundaries between physics and humanistic thought.

Competences

- Describe the fundamental forces of nature in relation to the configuration of the universe and the structure of matter.
- Make critical use of digital tools and interpret specific documentary sources.
- Students must be capable of collecting and interpreting relevant data (usually within their area of study) in order to make statements that reflect social, scientific or ethical relevant issues.
- Work collaboratively in teams.

Learning Outcomes

1. Assess the reliability of sources, select important data and cross-check information.
2. Develop teamworking skills, blend in and actively collaborate in achieving common goals.

3. Present and interpret results from searches in bibliography and other important sources.
4. Recognise the fundamental concepts of special relativity and quantum mechanics and the historical context in which they appeared.

Content

The syllabus is organised around six thematic blocks, which will be developed over 4/5 sessions each:

Introduction
1. Space and time
2. Mass and energy
3. Camps and information
5. Indeterminism and measurement
6. Models and reality
7. Open source and intellectual property
Conclusions

Methodology

The presentations of the topics are complemented by the texts available in the Moodle Classroom. The folder of each topic contains the texts that we will discuss in the classroom practices, and additional texts or materials. In the descriptor of each topic we propose questions to guide the reading and analysis of the texts.

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			
Lectures	33	1.32	4
Practical-theoretical lectures	16	0.64	2, 3, 4, 1
Type: Autonomous			
Personal work	99	3.96	2, 3, 4, 1

Assessment

Essays
You have to submit through the Moodle Classroom 5 short texts (maximum 600 words) in DOCX or PDF format, within the indicated deadlines. You will discuss some of the questions we raise for each block, in relation to the proposed readings. We will grade the submissions through the Moodle Classroom.

Exam blocks 1 to 3
The exam will be based on the questions proposed in the Virtual Campus and will refer to the texts we will have analysed. You will have to identify and explain the significance of some of these texts. The exam is scheduled for week 8 of the semester.

Review of a text and presentation in the classroom
In the review, of a maximum length of 3000 words, which you will do in groups of two or, exceptionally, three, you will clearly explain the main ideas of the chosen text and its significance in the context of the subject. On the Virtual Campus we will propose texts for the review and we will give indications on the elaboration and evaluation of this activity. The presentations are scheduled for week 16 of the semester and will be used to draw up the conclusions of the course.

Recovery
There will be a recovery test of the course, with a maximum total weight of 60%. In order to participate, you must have been evaluated in a set of activities the weight of which is equivalent to a minimum of two thirds of the total grade of the subject.
The student will be considered as non-assessable if he/she has not participated in all the assessment activities.

Single assessment
If you opt for the Single Assessment, you will have to submit the hand-outs and the review on the same day you take the exam corresponding to blocks 1 to 3. The weighting of these elements will be the same as that of the Continuous Assessment.

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.

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Essays	40 %	0	0	2, 3, 4, 1
Exam	30 %	2	0.08	4
Review	30 %	0	0	2, 3, 4, 1

Bibliography

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Stengers, Isabelle (2018). *Another Science is Possible. A Manifesto for Slow Science*. Cambridge: Polity.

Software

No specific software is required.