

Academic Year: ( 2019 / 2020 )

Review date: 13-06-2018

Department assigned to the subject: Humanities: History, Geography and Art Department

Coordinating teacher: FRIAS NUÑEZ, MARCELO

Type: Compulsory ECTS Credits : 6.0

Year : 4 Semester : 1

## OBJECTIVES

The main objective of the course is that students acquire a minimum body of knowledge and skills which enable them to analyze the contribution of Science to the understanding of our current society. For this purpose, the role played by scientific paradigms will be highlighted in order to understand the phenomena and historical changes and, therefore, society as a whole. Analyzing the role of Science's recent past in historical processes is necessary to ensure a long-term vision of the scientific transformations, as a fundamental tool for the critical perception of current world problems.

## DESCRIPTION OF CONTENTS: PROGRAMME

### UNIT I. CONCEPTS, METHODS & PARADIGMS

- 1) INTRODUCTION. a) Science and Science History. B) Classic Paradigms. c) Historical processes and Science.
- 2) PRECEDENTS: a) Renaissance Science. b) Modern Science and Knowledge dissemination. c) Scientific Expeditions.

### UNIT II. SCIENCE & HISTORICAL CHANGE

- 3) REVOLUTIONARY CHANGES & CONTEMPORANEITY. The Industrial Revolution and its Consequences.
- 4) SCIENCE & METHOD. a) Chemical Revolution. b) New Disciplines. c) The Laboratory.
- 5) TRANSFORMATION OF MEDICINE & PUBLIC HEALTH POLICIES. a) New View on Illness. b) From Public Hygiene to Social Medicine.
- 6) SCIENCE & EVOLUTION. Determinist Representation.
- 7) SCIENCE CHALLENGES. a) Contemporary society and the impact of Einstein, the Theory of Special Relativity and the Quantum Theory. b) Science as Destruction.
- 8) TRIUMPH OF SCIENCE AT CONTEMPORARY SOCIETY. a) Science Institutionalization. b) Science as Object of Social Study. c) Social Applications of Science.

### UNIT III. SCIENCE GLOBALIZATION

- 9) SCIENTIFIC INTERNATIONALIZATION. a) Scientific Communication. b) International Scope of Science. c) Social Transformation of Science. d) Scientific Research as a Model of International Collaboration.
- 10) CHALLENGES & HOPES FOR THE NEW MILLENIUM. a) From International Science to Globalized Science in the frame of Knowledge Society. b) Science amongst recent Historical Changes and XXI Century Challenges.

## LEARNING ACTIVITIES AND METHODOLOGY

The course combines lectures and practical sessions. The essential aspects of the course topics are taught at the lectures, considering different approaches and reflections that allow a deeper development of the subject, and presenting texts and basic bibliography. The practical classes are focused on the reading and analysis of texts, images and other significant documents. It will be strengthened a system of active teaching, involving the students in the learning process - It will also combine activities in class with the use of external resources and references, promoting the use of libraries and technological means and encouraging the exchange of critical views among students.

TUTORING SYSTEM : 2 hours per week. Analysis and guidance on any subject related to the syllabus and class, practices and papers.

## ASSESSMENT SYSTEM

Continuous assessment will be based on the following criteria:

\*Class participation: 10%. Precise interventions will be evaluated, which connect to the ideas that have been exposed and bring added value to the discussion. The professor will propose discussions based on texts, images or documentaries.

\*Practicum and works: 40%. There will be two types of activities: -Individual Practicum: It will be a practical exercise that relates the theoretical indications suggested in lectures with specific scientific

issues that have a historical trajectory and its social consequences. This practicum has to be presented and discussed in class. -Group assignments: students will be asked to perform and present a group exercise (for example, the preparation of a work on a specific issue referred to a scientific discipline). An important part of this work will be based on constructive criticism.

\*Final exam: 50%. It will assess the knowledge acquired by the student.

<b>% end-of-term-examination:</b>	50
<b>% of continuous assessment (assignments, laboratory, practicals...):</b>	50

#### BASIC BIBLIOGRAPHY

- ARTOLA, M., SÁNCHEZ RON, J. M. Los pilares de la ciencia, Espasa Libros, 2012
- BARONA, J.L. Ciencia e Historia, Valencia, Seminari d'Estudis sobre la Ciència, 1994
- FOUCAULT, M. Las palabras y las cosas, Madrid, Siglo XXI, 2007 (Primera ed. en 1966)
- GRIBBIN, J. Historia de la Ciencia. 1543-2001, Barcelona, Crítica, 2004
- KHUN, T. La estructura de las revoluciones científicas, Madrid. FCE., 2006 (Primera ed. en 1962)
- ORDÓÑEZ, J., NAVARRO, V., SÁNCHEZ RÓN, J. M. Historia de la Ciencia, Madrid, Espasa., 2004
- SOLIS, C., SELLÉS, M. Historia de la Ciencia, Madrid, Espasa, 2005