



## Study Plan

**School:** Institute for Research and Advanced Training  
**Degree:** Doctorate  
**Course:** History and Philosophy of Science - Museology (cód. 272)

### Alternative Plan Tutorial Plan

#### 1st Year - 1st Semester Alternative Plan Tutorial Plan

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
Thesis					

#### 1st Year - 2nd Semester Alternative Plan Tutorial Plan

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
Thesis					

#### 2nd Year - 3rd Semester Alternative Plan Tutorial Plan

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
Thesis					

#### 2nd Year - 4th Semester Alternative Plan Tutorial Plan

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
Thesis					

#### 3rd Year - 5th Semester Alternative Plan Tutorial Plan

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
Thesis					

#### 3rd Year - 6th Semester Alternative Plan Tutorial Plan

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
Thesis					

### Specialization Museology

#### Alternative Plan PhD Course



**1st Year - 1st Semester  
Alternative Plan PhD Course**

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
HIS09371D	Interdisciplinary Thematic Seminar I	History and Philosophy of Science	6	Semester	162
FIS09372D	Interdisciplinary Thematic Seminar II	History	6	Semester	162

**Group of Options**

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
FIS09374D	Topics in History of Science	History and Philosophy of Science	6	Semester	156
HIS09375D	History of Culture, Science and Society: Saber Agents, Knowledge and Innovation	History	6	Semester	156
FIS09376D	Topics in Philosophy of Science	History and Philosophy of Science	6	Semester	156
HIS09377D	Topics in Epistemology of Sciences	Philosophy of Sciences	6	Semester	156
HIS09378D	Museums Collection: Art and Science	History and Philosophy of Science	6	Semester	156
HIS09379D	Museums, Education and Scientific Culture	History and Philosophy of Science	6	Semester	156
HIS09380D	Public Library and Information Society	History	6	Semester	156
FIS09381D	Nature, Science and Public Understanding of Science	History and Philosophy of Science	6	Semester	156
HIS09382D	Museums and Collections as the history of science object	History and Philosophy of Science	6	Semester	156
HIS09383D	Health and Science in the Contemporary Age: schools, communities and networks for research and health care	History and Philosophy of Science	6	Semester	156
HIS09384D	Medicine: History, Society and Art	History	6	Semester	156
HIS09385D	Einstein Studies	History and Philosophy of Science	6	Semester	156
HIS09386D	Experimental philosophy	History and Philosophy of Science	6	Semester	156
HIS09387D	Society, health, social protection and well-being: compared perspectives	History	6	Semester	156
FIL09388D	Philosophy of Logic	Philosophy	6	Semester	156

**Group of Free Options**

FIS09373D	Project of Thesis-Seminar	History	6	Semester	156
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**1st Year - 2nd Semester  
Alternative Plan PhD Course**

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
	Thesis				

**2nd Year - 3rd Semester  
Alternative Plan PhD Course**

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
	Thesis				



**2nd Year - 4th Semester  
Alternative Plan PhD Course**

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
Thesis					

**3rd Year - 5th Semester  
Alternative Plan PhD Course**

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
Thesis					

**3rd Year - 6th Semester  
Alternative Plan PhD Course**

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
Thesis					

**Conditions for obtaining the Degree:**

\*\*\* TRANSLATE ME: PLANO COM CURSO DE DOUTORAMENTO (Modelo 1):{\ }newline

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Para aprovação na componente curricular nesta especialização deste programa de doutoramento é necessário a aprovação (através de avaliação ou creditação) das seguintes unidades curriculares: {\ }newline

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1º Semestre: {\ }newline

- 3 UC Obrigatórias num total de 18 ECTS{\ }newline

- 2 UC Optativas num total de 12 ECTS do grupo de optativas disponíveis no plano de estudos, podendo 6 ECTS ser como optativa livre de qualquer curso da UÉ ou de exteriores à UÉ no âmbito de parcerias de investigação {\ }newline

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Para obtenção do grau, é necessário a aprovação da Tese com o total de 150 ECTS no 1º, 2º e 3º Ano{\ }newline

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PLANO TUTORIAL (Modelo 2):{\ }newline

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Para obtenção do grau, é necessário a aprovação da Tese com o total de 180 ECTS no 1º, 2º e 3º Ano{\ }newline

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PLANO TUTORIAL (Modelo 2) - ESPECIALIDADE EM MUSEOLOGIA: {\ }newline

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Para obtenção do grau, é necessário a aprovação da Tese com o total de 180 ECTS no 1º, 2º e 3º Ano \*\*\*



## Program Contents

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### **Interdisciplinary Thematic Seminar I (HIS09371D)**

Seminar will be presented on topics of History and Philosophy of Science.

1. Historical perspective of interaction socio-economic-cultural scientific activity in the Western World (emergence of big-science).
2. The construction of models of science in European colonial world, the history of science in America countries (North and South).
3. Historical perspective of the construction of Scientific Theories. The scope of professional of science (XIX-XX) and the role of technology.
4. The History of Science at the turn of the century XIX-XX: Comte, Darwin: 2 approaches to scientific change.
5. The History of Science in the XX century, historiographical perspectives: Sarton, the Congress, Bachelard, Koyré, Merton, Kuhn, Lakatos. The new historiographical trends of late XX century.
6. Science as culture: end of the 2 cultures (Snow EP)
7. The scientific controversy: historical and disciplinary variations.

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### **Interdisciplinary Thematic Seminar II (FIS09372D)**

1. Historical perspective of interaction socio-economic-cultural scientific activity - the emergence of big-science).
2. Building models of science in European colonial world, the history of science in America countries (North and South).
- 3.. Historical perspective of the construction of Scientific Theories; actor's scientists, scientific institutions: Academies, Universities, and Laboratories: Scientific work in network. Signs of the professionalization of science (XIX-XX) (technique/ technology)
4. The History of Science at the turn of the century XIX-XX
5. The History of Science in the twentieth century, historiographical perspectives
- 6th. The new historiographical trends of late twentieth century: network science; transmission of science, knowledge exchange, research practice; cultural practices.
7. Science as a culture: end of the two cultures
8. The scientific controversy. Examples of some scientific controversies in the public space: ways of practicing science.

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### **Topics in History of Science (FIS09374D)**

Historical perspective of social, economic and cultural.

Historical perspective of the construction of big science - Scientific Theories.

History of Science in the 19th century change: Comte, Mach, Tannery and Duhem.

History of Science in the 20th century: Sarton, Congress, Bachelard, Koyré, Merton, Kuhn, Lakatos and Holton.

Scientific controversy: impacts and communication.

Study some of the controversies in the scientific focus of Physics.

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### **History of Culture, Science and Society: Saber Agents, Knowledge and Innovation (HIS09375D)**

1. Tópicos in History of Science

2nd. Sources, Methods, Historiography \_ seminar work, study visits: History and Culture of Science XVIII-XXI centuries

3rd. History of Science, History of scientific culture and the 'Public Understanding of Science', History Museum of Natural History, Collecting, scientific heritage. The different subject areas of History of Science

4th. History of Science, Health, research networks

5th. History of Science (XX): institutions of science policy, Europe / USA: State and political science.

6th. Science and scientific production of memory and rituals of scientific memory.

7th. Urban areas and organization of Science in European capitals / capital of colonial empires. Case studies: in search of an array of urbanism and organization of scientific knowledge in towns. a. Hill Health b. Hill's Science: Academy of Sciences of the National Museum of Natural History and Science, c. Hill agricultural and colonial



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### **Topics in Philosophy of Science (FIS09376D)**

Kant and the epistemology of newtonian physics - space and time, synthetic a priori, analogies of experience. The savants-philosophes of the end of the XIXth century: Maxwell, Boltzmann, Mach, Duhem e Poincaré. French philosophy of science: Meyerson, Brunschvig Bachelard. The emergence of logical positivism: Schlick, Neurath, Reichenbach, Carnap. The reaction to this movement: Popper; Kuhn; Feyerabend, Lakatos, Holton. Actuality of the kantism: Michael Friedmann revisits the synthetic a priori.

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### **Topics in Epistemology of Sciences (HIS09377D)**

The consolidation of Modern Science and the anthropological impact of Techno-science.

1. From Epistemology to Philosophy of Science. The scientific methodologies. Beliefs and ideologies. Unity and variety of science. Types of sciences and the diversity of validation processes.
  - 1.1 The epistemology of the scientific subject and of the scientific objects (theories, models, laws, facts, tools).
  - 1.2 The scientific rationality. The explanation in science. Laws and probabilities. Causality and teleology. Experimentation and observation. The structure of scientific theories. Models, metaphors and analogies.
  - 1.3 The historicity of Science. The notions of continuity, progress and scientific crisis. Emergency contexts, of discovery and justification. The consolidation of knowledge, education and dissemination.
  - 1.4 Regional epistemologies. Interdisciplinarity and transdisciplinarity.
  - 1.5 The Epistemology of Social Sciences. Social studies of Science and Technology.

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### **Museums Collection: Art and Science (HIS09378D)**

History of ethnobiology and ethnobiological scientific museums; Research methods in ethnobiology. Techniques of field research and data analysis in an ethnobiological museum framework; Study-case analysis (material culture).

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### **Museums, Education and Scientific Culture (HIS09379D)**

- One. Museology as cultural history
- 2nd. Investigate in Museology - method, concepts and sources
- 3rd. Museums and education - a historical perspective: relations with the disciplinary history of collecting, museums and museology. Education as museological function.
- 4th. The semantic evolution of modern museum and its setting in the Enlightenment.
- 5th. The Renaissance and Early Modern Period (XV-XVII centuries)
- 6th. The chambers of wonders
- 7th. The wonderful and magical
- Eight. The encyclopedic spirit
- 9th. University reforms and new museums and scientific equipment
10. Art and antiquity - museum, heritage and arts education
11. Challenge of Vanguards Museum (Artists, Architects, Writers)
12. Museums and social distinction. The innate (the 'predestination' a 'grace' and 'gift') and acquired.
13. Evolution and scope of the museum concept.
14. Science centers and movement "hands on".
15. Museum of Science and Technology, Science Centers, Planetariums, Museums of Natural History.

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### **Public Library and Information Society (HIS09380D)**

1 - The public library concept, objectives and theoretical background. 2 - The public reading in Portugal: from the Public Library of the Royal Court to the National Network of Public Libraries. 3 - The public library and the information society: the challenges of information technology and communication, the computer network of public reading and digital libraries. 4 - Information resources. 5 - Human resources and organization. 6 - The public library services. 7 - Management and Marketing Public Library



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### **Nature, Science and Public Understanding of Science (FIS09381D)**

Nature and intelligibility: nature is written in mathematical characters? - Natural philosophy to "facticeiros" (fabricators of facts, according to Bruno Latour).

Nature, science and society: the text of Lavoisier and Séguin "On the breath of Animals" to "Popular Scientific Lectures" of the late nineteenth century.

-The nature and the Romantics: scientific experimentation as fragment; taste by weather phenomena to particle physics.

Da-unification of the arts to the unification of nature: the development of the energy concept.

-From the "science dans les salons" to "science in the city".

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### **Museums and Collections as the history of science object (HIS09382D)**

Constitution of the disciplinary field

Cultures of Natural Sciences

Objects, collecting, collectors

Travel, catalogs and exhibitions

Expansion of the museums in the nineteenth century

Metropolitans Museum

The Movement of the Americas Museum

Scientific exchanges, trade and professional

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### **Health and Science in the Contemporary Age-schools, communities and networks for research and health care (HIS09383D)**

Health, State and Society. Science and Health in the 19th and 20th centuries. Hospital medicine and laboratory medicine.

Formation and development of research schools and communities in the biomedical sciences. Networks of agents (individuals, groups and institutions) in research and health care. Prosopographic, scientometric and social network analysis methodologies.

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### **Medicine: History, Society and Art (HIS09384D)**

1. The Medicine Iconography (from Antiquity to Contemporaneity).

2. The Human Body: ideas and representations - from the Perfection Ideal to the Ephemeral Body (sickness, old age and death).

3. The Medical Architecture and Typologies.

3.1 Convents, Monasteries and Refugees

3.2 The Hospitals and Asylums.

3.3 Sanatoriums, Themaes and Clinics

4. Urbanism and Salubrity

4.1 The Hygienist City

4.2 The Garden City

4.3 The Intelligent City

4.4 The Resilient City.

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### **Einstein Studies (HIS09385D)**

Give an overview of the activity and thought of one of the greatest physicists of the twentieth century, taking the opportunity to address the transition from classical physics to modern physics.



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### **Experimental philosophy (HIS09386D)**

Instrumental Epistemology; Models: Representing Things; Working Knowledge; Encapsulating Knowledge.  
Instruments of Science and Citizenship; Things that talk: The glass flowers of Lorraine Daston.  
The breath of animals (experiment of Lavoisier, Séguin); Joule's experiment; Faraday's motor.

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### **Society, health, social protection and well-being: compared perspectives (HIS09387D)**

Historical overview of the European poor relief, health care and welfare system;  
Analysis of the political, religious and economic determinants of modern public health and welfare systems and their historical path;  
The construction of concepts and social representations in historical perspective and the social inclusion/exclusion questions associated.

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### **Philosophy of Logic (FIL09388D)**

1. Truth, validity and logical consequence.
2. Problems of logical form: kinds of negation, theories of conditionals, quantification and singular terms (proper names and definite descriptions).
3. Topics in the philosophy of modal logic: possible worlds and its interpretation.
4. The semantic paradoxes and the problem of vagueness: main theories and their problems.
5. Classical logic and non-classical logics: monism, pluralism or instrumentalism?

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### **Project of Thesis-Seminar (FIS09373D)**

By its nature, this discipline is dispersed by a wide range of topics; his aim is to support the work of all students and, at the same time, put them in contact with other research, and development of related topics his dissertation. To Enrich the scientific perspectives of students, under the thematic point of view and methodology, and put the discussion under debate, the work going on developing his doctoral dissertation