



Study Plan

School: Institute for Advanced Studies and Research
Degree: Doctorate
Course: Educational Sciences (São Tomé and Príncipe) (cód. 581)

1st Year - 1st Semester

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
PED9272D	Introductory Seminar	Education Sciences	2	Semester	52
PED9274D	Education and Contemporary Society	Education Sciences	3	Semester	78
PED9276D	Research Seminar I	Education Sciences	5	Semester	130

Group of Options

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
FIL9197D	Detailed Problems of Contemporary of Philosophy I	Philosophy	5	Semester	130
GES7979D	Entrepreneurship and Innovation	Management	8	Semester	208
FIS9374D	Topics in History of Science	History and Philosophy of Science	6	Semester	156
HIS9375D	History of Culture, Science and Society: Saber Agents, Knowledge and Innovation	History	6	Semester	156
FIS9429D	Topics in Philosophy of Science	History and Philosophy of Science	6	Semester	156
HIS9379D	Museums, Education and Scientific Culture	History and Philosophy of Science	6	Semester	156
MAT7516D	Statistical Inference	Mathematics	7.5	Semester	198
PSI9055D	In-deph Seminar in Psychology of Education I	Psychology	5	Semester	130
FIL10294D	Ethics and Responsibility of Organizations	Philosophy	6	Semester	168
ECN9308D	Culture, Politics and society in a Global Era	Legal-Political Theory and International Relations	6	Semester	168

Thesis

1st Year - 2nd Semester

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
PED9275D	Knowledge Production and Transfer in Education	Education Sciences	2	Semester	52
PED9273D	Education and Knowledge	Education Sciences	3	Semester	78
PED9277D	Research Seminar II	Education Sciences	5	Semester	130



1st Year - 2nd Semester

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
Group of Options					
Component code	Name	Scientific Area Field	ECTS	Duration	Hours
FIL9199D	Detailed Problems of Contemporary of Philosophy II	Philosophy	5	Semester	130
MAT7988D	Methods of Multivariate Statistics	Mathematics	6	Trimester	161
MAT7537D	Categorical Data Analysis	Mathematics	7.5	Semester	196
PSI9056D	In-deph Seminar in Psychology of Education II	Psychology	5	Semester	130
FIL10294D	Ethics and Responsibility of Organizations	Philosophy	6	Semester	168
ECN9308D	Culture, Politics and society in a Global Era	Legal-Political Theory and International Relations	6	Semester	168
Thesis					

2nd Year - 3rd Semester

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
Thesis					

2nd Year - 4th Semester

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
Thesis					

3rd Year - 5th Semester

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
Thesis					

3rd Year - 6th Semester

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
Thesis					

Conditions for obtaining the Degree:

*** TRANSLATE ME: O plano de estudos do doutoramento foi reestruturado, tendo entrado em funcionamento em 2012/13 o seguinte plano de estudos (DR n.º141, de 23 de julho de 2012, Despacho n.º9908/2012)

Para aprovação na componente curricular, curso de doutoramento com 30 ECTS), é necessário a aprovação (através de avaliação ou creditação) das seguintes unidades curriculares:

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1º Semestre{\}newline

- 3 UC Obrigatórias num total de 10 ECTS {\}newline

- UC Opativas disponíveis no plano de estudos no quadro 8, num total de 5 ECTS{\}newline

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2º Semestre{\}newline

- 3 UC Obrigatória num total de 10 ECTS {\}newline

- UC Opativas disponíveis no plano de estudos no quadro 9, num total de 5 ECTS

Para obtenção do grau necessita de obter também aprovação nas provas públicas de defesa da Tese, decorrendo a investigação (Tese) desde o 1º ao 6º semestre, com um total de 150 ECTS.

Program Contents



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Introductory Seminar (PED9272D)

1. The main lines of the state of the art in the current debate in Education, in the context of contemporary Society and Culture.
2. Main research paradigms and their implications in the construction of educational knowledge.
3. Transversal themes and models of analysis of the current questions in Education.
4. Fundamental milestones in the evolution of the portuguese educational system, particularly in what information and communication technologies are concerned.

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Education and Contemporary Society (PED9274D)

1. The state of the art of the current Education - Society debate.
2. Education in the European society (18th to 20th century) - From the Age of Enlightenment to the New School movement.
3. Education in the Portuguese society (18th to 20th century) - From the reforms of Marquês do Pombal to the Education reforms in the post 25th of April.
4. Models, ideas and educational practices in the contemporary Portuguese society.
5. Current questions in education: school structure, curricula and teacher-student status; teaching methods and new learning resources; schooling and literacy rates.
6. The big contemporary global political debates; State versus Civil Society in Education; Liberalism versus Communitarianism and Education; Education in the context of civilizational clashes; Occident versus Islam; Occident versus Orient.

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Research Seminar I (PED9276D)

1. The research process in education
 - The role of res in education
 - The nature, objectives and stages of the inquiry process.
2. Paradigms and approaches in social sciences res:
 - From a positivist paradigm to an interpretative one: characterization and implications for res;
 - Quantitative and Qualitative Approaches
3. Methods of res: Characterization and purposes.
 - Descriptive studies (survey), experimental studies, ethnography, case studies, teaching experience, action research, narrative inquiry.
4. Designing and planning an investigation
 - Formulating the problem / objective;
 - The role of theory;
 - The definition of the study participants;
 - Strategies and tools for data collection (interviews, questionnaires, observation, tests and documents) and record devices (written, audio and video)
 - Analysis of quantitative data (statistics and interpretation of statistical results);
 - Analysis of qualitative data (categories, criteria of evidence, content analysis).



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Detailed Problems of Contemporary of Philosophy I (FIL9197D)

Philosophical investigation in a contemporary perspective

- 1) Producing philosophy and the philosophical work
 - a) The "historical" and the "Contemporary "
 - b) The perspective of present and the question of historical consciousness
 - c) Research in Philosophy, dialogue within the philosophical community and the "school" way
- 2) Methodological approaches in the actuality. A introduction.
 - a) Analytic Philosophy
 - b) Phenomenological philosophy
 - c) Critical and transcendental philosophy
 - d) Hermeneutics
 - e) Deconstruction

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Entrepreneurship and Innovation (GES7979D)

Part I

- 1.1 Entrepreneurship Characterization
- 1.2 Comparison and Analysis (Macro) of Entrepreneurship
- 1.3 The entrepreneurial process
- 1.4 Intra-entrepreneurship or corporate entrepreneurship
- 1.5 Understanding innovation and connection with entrepreneurship

Part II

- 2.1 Dynamics of Innovation: Technology as innovation agent
- 2.2 Dynamics of Innovation: The innovator´s dilemma
- 2.3 Dynamics of innovation: Dominant design
- 2.4 Dynamics of innovation: An integrated model
- 2.5 Diffusion of Innovation

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Topics in History of Science (FIS9374D)

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 (HIS9375D)

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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Museums, Education and Scientific Culture (HIS9379D)

- 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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Statistical Inference (MAT7516D)

Fundamental concepts of probability (measure and probability, random vectors, marginal and conditional distributions, expected values, generating and characteristics functions, functions of random vectors and transformations).

Review of discrete and continuous distributions properties. Exponential families.

Multinomial and multinomial distributions.

Stochastic convergences and limit theorems.

Sampling and the most used sampling distributions.

Point estimation. Estimation methods (moments, maximum likelihood, least squares and bayes estimators). Properties of estimators. Crámer-Rao lower bound. Asymptotic behaviour. Robustness.

Interval estimation. Methods for finding interval estimators. Properties. Classical and bayesian approach.

Hypotheses testing. Type I and Type II probability errors. Duality. Methods for finding testes. Likelihood ratio tests. Properties of tests. Neyman-Pearson theorem, most powerful tests. Asymptotic behaviour. Robustness. Classical and bayesian approach.



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In-deph Seminar in Psychology of Education I (PSI9055D)

- 1- Conceptions and approaches to learning and teaching (Luisa Grácio)
- 2 - Involvement, interaction and educational settings (Madalena Melo)
- 3 - Learning Reading (Isabel Silva)
- 4 - knowledge construction throughout life (Elisa Chaleta)
- 5 - Intelligence and Educational Achievement (Gina Lemos)
- 6- Psychological development, education and post-graduate processes (Madalena Melo)
- 7 - Self-regulated learning and learning strategies (Luisa Grácio)
- 8 - Intelligence and Competence (Adelinda Candeias)

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Culture, Politics and society in a Global Era (ECN9308D)

- 1 — Modern politics as management of scarcity.
- 2 — Contradictions of modern politics: perspectives on the world of life against systemic modernity. The thesis of Hannah Arendt, Jürgen Habermas, Charles Taylor and Seyla Benhabib.
- 3 — Theories of worldliness. The relational tension / institutional in world politics.
- 4 — Citizenship and cosmopolitanism in an era fragmentary.

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Knowledge Production and Transfer in Education (PED9275D)

1. Theoretical and applied research in educational sciences and their role in the processes of and knowledge production and transfer;
2. Methodological approaches to educational research and its applicability in real formal and non-formal educational contexts;
3. Research projects in Education: international and national contexts;
4. Analysis of real and concrete examples of production and / or transfer of knowledge in Education;
5. The researcher role in production and application of knowledge in real contexts projects;

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Education and Knowledge (PED9273D)

1. From Culture to Education, from Learning to Knowledge.
 - 1.1. Pedagogy, Didactics and Educational Sciences.
 - 1.2. From the teacher that teaches to the teacher that learns.
 - 1.3. Learn and communicate: guiding principles.
 - 1.4. Know and teach, learn and know, research and learn.
2. From Knowledge to Culture, from Education to Literacy: New Challenges to the Educational Sciences.
 - 2.1. The major epistemological, psychological and sociological contemporary frames: constructive perspectives.
 - 2.2. Spontaneous knowledge and scientific knowledge.
3. Language, Communication and Learning in the classroom.
 - 3.1. Language and thought, learning and development.
 - 3.2. The semantics and syntax of the scientific discourse.
 - 3.3. Individual and socio-cultural learning factors.
 - 3.4. From the teacher?s knowledge to the student?s learning, from tacit knowledge to explicit knowledge.



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Research Seminar II (PED9277D)

1. Presentating and reportting research.

- Dissertations; scientific article; Presenting at conferences. Dissemination of knowledge among professionals and society in general.

2. Quality of educational research

- Issues of conceptual validity, internal and external validity, reliability and generalization.

- Criteria for assessing quality in educational research.

3. The ethics of research in education.

- Protection of the participants and institutions involved in research. Research integrity and accountability to the scientific community. Responsible attitude of the researcher.

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Detailed Problems of Contemporary of Philosophy II (FIL9199D)

1. The foundation of poetic language in Heidegger

1) From discours (Rede) to the statement "language speeches"

2) Language at the time of the technique as an instrument of communication and information

3) Language, poetry and trivialization of originary saying

4) Language and history: a people. Language and essence of human

2. Reality and Subject tested in cinema

1) From logical paradoxes of time to the power of the fake - Deleuze on the image regime in cinema

2) Figure of subject and loss of identity: Žižek - Review of modern philosophy (Descartes, Kant, Hegel) from Blade Runner

3) The ontic essences to intertranslation in human, animal and robot network (Kac)

3. Philosophy and Architecture: the thought of Massimo Cacciari

1) Notion of Project. Utopian dimension of architecture

2) City. Polis and civitas. Medieval city. European city, negotium space. Advent of cities and nihilism. Town-planning and post-metropolises

3) The ethical dimension of dwelling and the axiological frame of building

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Methods of Multivariate Statistics (MAT7988D)

1. Introduction. Overview of Multivariate Statistical Methods. Dependence (DT) and Interdependence Techniques (IT). Extensions.

2. Preliminary and Exploratory Multivariate Data Analysis. Cluster Analysis

3. Multiple Regression, Path Analysis and Factorial Analysis. Exploratory versus Confirmatory Factorial Analysis

4. Introduction to Structural Equation Modeling

5. Advanced topics in Multivariate Statistics: Data Mining, Tree-based Classification,

Partial Least Squares (PLS), Stochastic Frontier Models- Efficiency and Productivity Analysis, Generalized Linear Models, Multi-level Models, and Discriminant Analysis.

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Categorical Data Analysis (MAT7537D)

Contingency Tables.

Generalized linear models: characterization, link functions, statistical modelling, assumptions, residual analysis, validation and inference.

Discrete and continuous models: Logistic (Binomial, Ordinal and Multinomial), Poisson, Negative Binomial, Inverse-Gaussian, Gama, Lognormal.

Generalized Estimating Equations (GEE).

Other topics in statistical modeling of categorical data.



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In-deph Seminar in Psychology of Education II (PSI9056D)

10 - Relational context in inclusive processes (Graca Santos)

11- Life projects development/ disadvantaged populations carrer (Paulo Cardoso)

12 - Processes and Dynamics in psychological assessment (Adelinda Candeias)

13 - Learning Difficulties(Elisa Chaleta)

(plus 6 sessions of the two guest Professors within the partnerships agreements)