



## Study Plan

**School:** School of Social Sciences  
**Degree:** Master  
**Course:** Informatics Teaching (cód. 535)

### 1st Year - 1st Semester

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
INF07191M	Multimodal Systems	Informatics	6	Semester	157
INF07192M	Applied Artificial Intelligence	Informatics	6	Semester	157
PED11439M	Didactic of Informatics I	Education Sciences	6	Semester	156
PED11169M	Research Methodologies in Education	Education Sciences	6	Semester	156
PSI11440M	Educational Psychology	Psychology	6	Semester	156

### 1st Year - 2nd Semester

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
INF07174M	Ubiquitous Computing	Informatics	6	Semester	157
PED11441M	Didactic of Informatics II	Education Sciences	12	Semester	312
PED11178M	Educational Administration and Management	Education Sciences	6	Semester	156

### Group of Options

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
PED11184M	School Environment Communication	Education Sciences	6	Semester	156
PED11186M	Education for Health	Education Sciences	6	Semester	156
PED11188M	Multiple Literacy	Education Sciences	6	Semester	156
PED11185M	Education for Citizenship	Education Sciences	6	Semester	156
PED11189M	History of Education in Portugal	Education Sciences	6	Semester	156
PED11190M	School Libraries	Education Sciences	6	Semester	156

### 2nd Year - 3rd Semester

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
PED11442M	Didactic of Informatics III	Education Sciences	6	Semester	156
PED11443M	Learning Assessment in Informatics	Education Sciences	6	Semester	156
PED11444M	Supervised Teaching Practice	Education Sciences	48	Year	1248



## Conditions for obtaining the Degree:

\*\*\* TRANSLATE ME: Para aprovação na componente curricular nesta área de especialização é necessário a aprovação (através de avaliação ou creditação) das seguintes unidades curriculares: { \ }newline

{ \ }newline

1º Semestre: { \ }newline

5 UC obrigatórias num total de 30 Ects

2º Semestre: { \ }newline

3 UC obrigatórias num total de 24 Ects { \ }newline

1 UC optativa do quadro de optativas num total de 6 Ects { \ }newline

{ \ }newline

{ \ }newline

3º Semestre e 4º Semestre

2 UC obrigatorias em um total de 12 Ects { \ }newline

UC de Prática de Ensino Supervisionada num total de 48 Ects

É necessário também a aprovação no acto público de defesa do relatório da unidade curricular relativa à prática de ensino supervisionada. \*\*\*

## Program Contents

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### Multimodal Systems (INF07191M)

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### Applied Artificial Intelligence (INF07192M)

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### Didactic of Informatics I (PED11439M)

1. Introduction: Society, School and Technologies
2. Teaching of computer science and issues of didactics
3. Informatics and curriculum: Collaborative learning and computers (CSCL); Social networking; Data protection, copyright, ethics and safety in children and young Internet
4. Planning the processes of teaching and learning.

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### Research Methodologies in Education (PED11169M)

Epistemological foundations of research in education.

The ethics of research.

Research strategies and research designs: the interrelation between paradigm(s), problem(s), objectives and research methods.

Methods, techniques and instruments for collecting and analyzing data.

The research project and the educational action. Action research as a strategy for consolidating teaching practice.

The writing of scientific reports: the specific case of the Supervised Teaching Practice report.



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### **Educational Psychology (PSI11440M)**

1. Development and Learning in Educational Contexts
  - 1.1. Theories about human development; human development in context;
  - 1.2. Perspectives on learning in educational contexts: behavioral, cognitive, sociocognitive, constructivist, socioconstructivist and ecological perspectives.
  - 1.3. Metacognition and self-regulation of learning
2. Personal, socio-emotional and relational factors in educational processes:
  - 2.1. Self-concept and self-esteem
  - 2.2. motivational processes
3. Interpersonal and contextual dynamics in educational processes and contexts.
  - 3.1. Representations and expectations in the educational relationship
  - 3.2. Diversity(ies) in educational contexts
  - 3.3. Educational relationship and classroom management
  - 3.4. School climate and involvement of student in school

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### **Ubiquitous Computing (INF07174M)**

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### **Didactic of Informatics II (PED11441M)**

1. Informatics, computing and learning
  - a) Computational Thinking in School
2. Teaching Informatics and Programming
  - a) Methods and techniques of teaching informatics
  - b) Strategies "Unplugged"
  - c) Programming environments for children and youth
3. Software and digital educational resources
  - a) Creation, Organization and Use: repositories, portals and other digital libraries
  - b) Evaluation of digital educational resources



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### **Educational Administration and Management (PED11178M)**

1. State Administration and Organization
2. Educational system, organization, and structures
  - 2.1. Constitutional ideas and guiding principles
  - 2.2. LBSE as a reference of the education and teaching system
  - 2.3. Purposes of school education and organizational and pedagogical implications
  - 2.4. Educational administration, levels, and organic structures
3. Educational administration and territorial distribution of competences
  - 3.1. Contextual factors and socio-educational equity
  - 3.2. Decentralization, Territorialization and Municipalization of Education
  - 3.3. Regulatory frameworks for curriculum flexibility and inclusion
4. Educational Policies, autonomy, and school development
  - 4.1. School organizations and structures
  - 4.2. School management processes
  - 4.3. Organizational and professional cultures and climates
  - 4.4. Leadership at school
5. Class as organizational unit of analysis
  - 5.1. Flexible organization of groups of students and teachers
  - 5.2. Class size and composition structure

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### **School Environment Communication (PED11184M)**

1. Human communication
2. Barriers to communication
3. First impression
4. Self-knowledge and knowledge of the other
5. Non-verbal communication in the school context

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### **Education for Health (PED11186M)**

- Education and health.
- Factors that determine the level of health and disease in the world today.
- Paradigms of health promotion.
- Environment and Health.
- Health promotion and education.
- Emerging fields in health education.
- Health in the post transactional societies in the twenty-first century.
- Healthy Living and evolution of disability.
- The ABC model and the model of empowerment in health education
- Theories and models in health education.
- Perception of risk communication and prevention.
- Group work and the development of preventive behaviors.
- Habits of risk and prevention: Prevention of diseases of our time with a healthy diet; Body and health: determinants and implications of body dissatisfaction; Prevention and mental health promotion; Neuroscience as a meeting point for the prevention and treatment of addiction; Transmitted diseases; The school and some health problems in childhood; Risks, accident rates and injuries.



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### **Multiple Literacy (PED11188M)**

- A. Literacy/critical literacy/multiliteracy
- B. Reading the world/texts (written/oral/visual/other): 1) breaking the code(s); 2) Participate in the meanings of texts; 3) Use texts functionally; 4) Critically analyze and transform texts;
- C. Literacy practices inducting strategies: verbal/information/aural and oral/visual.
- D. Multiliteracies, social media and cyberspace:
- E. Multiliteracies and Education: creativity, critical thinking and ethics.

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### **Education for Citizenship (PED11185M)**

- A. Key concepts: democracy, ideology, justice, human rights, citizenship, freedom, equality, inclusion, globalization, individualism, liberalism, socialism.
- B. Education for citizenship as education for values.
- C. The new scenarios of citizenship education: digital citizenship, artificial intelligence, climate change, the multipolar world.
- D. The National Citizenship Education Strategy.
- E. The dimensions of citizenship education: (according to the DGE)
  - E.1. European dimension of Education.
  - E.2. Environmental Education for sustainability.
  - E.3. Consumer Education.
  - E.4. Financial education.
  - E.5. Intercultural education.
  - E.6. Education for Peace.
  - E.7. Education for Gender Equality.
  - E.8. Educating to avoid unnecessary risk.
  - E.9. Education for development.
  - E.10. Education for entrepreneurship.
  - E.11. Education for charity work.
  - E.12. Education for Human Rights.
  - E.13. Media education.
  - E.14. Education for road safety.
  - E.15. Education for health and sexuality

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### **History of Education in Portugal (PED11189M)**

- 1. Introduction: definition of concepts - History of Education, History of Ideas, Educational, Current Contemporary Educational Thought, History of Pedagogy
- 2. Historical roots of contemporary educational thinking - The pedagogical debate in the Enlightenment (eighteenth century)
- 3. Liberalism and the defence of Public Instruction (nineteenth century)
- 4. The Republic and the construction of the "New Man" (1910-1926)
- 5. The 'Estado Novo' and nationalistic and traditional education (1933-1945)
- 6. The pedagogical modernity Portuguese - Proponents of the "New School Movement"

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### **School Libraries (PED11190M)**

The School Libraries Network: history and legislation. Documents of the School Libraries Network. The support for curriculum development and the School Library. The role of School Library in the development of reading and literacy. Relationship between School Library and the educational community. Management of School Library. The Evaluation Model School Library.



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### **Didactic of Informatics III (PED11442M)**

1. Teaching and learning methodologies in Informatics and the curricular changes in Basic and Secondary Education.
  - 1.1 Educational work strategies in basic education: gamification, educational games in digital format, learning by project / problem / task.
2. Multimedia and Learning
  - 2.1 Cognitive theory of multimedia learning
3. New social learning and e-learning platforms
4. Web 2.0 and Web 3.0: educational implications. Tools and applications for teaching and learning of ICT.

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### **Learning Assessment in Informatics (PED11443M)**

1. Introduction: basic concept of assessment?and fundamentals of evaluation
2. Curriculum, learning and evaluation
  - a) The cycle of planning and evaluation
  - b) Functions of the evaluation Curriculum-learning-assessment
  - c) Types of evaluation
3. The process of evaluation: planning, collecting, interpreting and using results
4. Assessment for different purposes: regulate the student's progress , regulate the process of teaching make decisions about learning, rate the student's achievement
5. Learning evaluation in informatics: traditional vs. alternative
  - a) Knowledge evaluation assessment
  - b) Performance based evaluation
  - c) Systematic observation
  - d) e-Portfolio
  - e) Artifact based evaluation
  - f) Competency based evaluation
6. Assessment Instruments in informatics

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### **Supervised Teaching Practice (PED11444M)**

1. Dimension Of Development Of Teaching And Learning
  - a) Planning: Structuring sources; Differentiation of teaching and progression of learning; Articulated conception of annual plans, step plans and lesson plans.
  - b) Evaluation: Collection and analysis of data from the initial assessment; Articulation between the results of formative assessment and summative assessment; Design and operationalizing instruments to assess student learning.
  - c) Teaching classes in basic and secondary education and in informal groups of students
2. Participation In School And Relationship With The Community
  - a) Collaboration in group activities of PE
  - b) Conception, and development of complementary curricular activities with participation of the educational community
3. Dimension Professional, Social And Ethics: Collaborative work; The professional attitude.
4. Professional Development: Development of an action- research project and its public presentation and discussion.