

Course Unit	Research Methodology	Field of study	Educational Sciences
Master in	Science Education	School	School of Education
Academic Year	2020/2021	Year of study	1
Type	Semestral	Semester	2
Level	2-1	ECTS credits	10.0
Code	5016-627-1203-00-20		
Workload (hours)	270	Contact hours	T - TP 36 PL - TC - S - E - OT 54 O -

T - Lectures; TP - Lectures and problem-solving; PL - Problem-solving, project or laboratory; TC - Fieldwork; S - Seminar; E - Placement; OT - Tutorial; O - Other

Name(s) of lecturer(s) Carlos Manuel Mesquita Morais

#### Learning outcomes and competences

At the end of the course unit the learner is expected to be able to:

1. Decide on the planning, design and conduct of an investigation in the face of a given problem in the area of the master's degree;
2. Evaluate critically and reflexively the state of the art associated with a given problem;
3. Build and validate information collection instruments;
4. Apply concepts, methods, and instruments for collecting, organizing and analysing data in quantitative and qualitative studies;
5. Prepare projects, reports and scientific articles.

#### Prerequisites

Before the course unit the learner is expected to be able to:  
Not applicable

#### Course contents

1. Stages of scientific research: problematics, planning and execution. 2. Bibliographic research and reference studies on the research problem. 3. Information processing and analysis. 4. Scientific writing.

#### Course contents (extended version)

1. Stages of scientific research: problematics, planning and execution
  - Research problem: Definition and delimitation of the problem; Hypotheses, questions and objectives
  - Research planning: Concept and structure of a research project; Development of research projects
  - Execution of the investigation: Samples and study groups; Research techniques and instruments
2. Bibliographic research and reference studies on the research problem
  - Definition of concepts involved in research
  - State of the art on the problem under study
3. Information processing and analysis
  - Descriptive statistics and inferential statistics
  - Collection, organization and interpretation of information from quantitative data
  - Use of statistical tests to assess information
  - Collection, categorization and interpretation of information from quantitative data
4. Scientific writing
  - Analysis and discussion of research reports
  - Structure and preparation of research reports
  - Analysis and discussion of scientific articles
  - Structure and elaboration of scientific articles

#### Recommended reading

1. Bardin, L. (2015). Análise de conteúdo (4.ª Ed.). Edições 70.
2. Creswell, J. (2014). Research design: Qualitative, quantitative, and mixed methods approaches (4th Ed.). SAGE Publication Ltd.
3. Amado, J. (2014). Manual de investigação qualitativa em educação (2.ª Ed.). Imprensa da Universidade de Coimbra.
4. Pestana, M. & Gageiro, J. (2014). Análise de dados para ciências sociais. A complementaridade do SPSS (6.ª Ed.). Edições Sílabo.
5. Coutinho, M. (2011). Metodologia de investigação em ciências sociais e humanas, teoria e prática (1.ª Ed.). Almedina.

#### Teaching and learning methods

Exploration of themes using active learning methodologies, including project-based learning and problem-based learning. Preparation of reports or research papers. Discussion of topics in small or large groups. Individual work or collaborative work. Resolution of consolidation tasks of the topics covered in the course.

#### Assessment methods

1. Continuous assessment - (Regular, Student Worker) (Final)
  - Intermediate Written Test - 50% (Two summative tests)
  - Work Discussion - 50% (Implementation and discussion of proposed tasks (ordinary student and student worker))
2. Assessment by examination - (Regular, Student Worker) (Supplementary, Special)
  - Final Written Exam - 100% (Written test about course contents)

#### Language of instruction

Portuguese, with additional English support for foreign students.

#### Electronic validation

Carlos Manuel Mesquita Morais	Manuel Celestino Vara Pires	Delmina Maria Pires	António Francisco Ribeiro Alves
23-10-2020	23-10-2020	26-10-2020	26-10-2020