RESEARCH METHODOLOGIES

Mestrado em Engenharia Eletrónica e de Computadores

Code: 25801

Main Scientific Area: Intelligent Systems and Control

Lecturer: Nuno Miguel Feixa Rodrigues

Language of Instruction: Portuguese

Regime: S2

Contact Hours: 30h Total Workload: 138h

ECTS: 6,0

Objectives

The CU presents the following objectives:
-Assimilation processes, methodologies and practices related to scientific research.
-Development of scientific critical spirit.
-Development of the ability to produce a scientific text of a literature review and the work plan of the dissertation.

Learning Outcomes

Students who successfully complete the CU of Research Methodologies should possess the following knowledge and skills:
- Understand the major research methodologies;
- Be able to identify a research problem and conduct a literature review;
- Define a scientific methodology and work plan;
- Develop scientific articles.

Course Contents

Theoretical component:
1.Understand the concepts of scientific research
2.Identify a problem and carry out the research literature review
3.To define a conceptual model and hypotheses
4.To define research methodology and work plan
5.Scientific writing
Practical component:
1.Research and analysis of scientific papers
2.Written of a literature review scientific paper
3.Develop of the work plan of the master dissertation

Recommended Bibliography

- J. David Creswell, John W. Creswell (2018), Research Design: Qualitative, Quantitative, and Mixed Methods Approaches (5th Ed.), SAGE Publications.
- Dey, R., Deb, D., Balas, V. E. (2019), Engineering Research Methodology: A Practical Insight for Researchers, Springer Singapore.
- Hair, Joseph F, Jr., Rolph E. Anderson, Ronald L. Tatham e William C. Black (1998), Multivariate Data Analysis (5th Ed.), Upper Saddle River, US: Prentice Hall.
- Paul R. Cohen, P.R. (1995), Empirical Methods for Artificial Intelligence (Bradford Books) (1st Ed.), The MIT Press, USA.

- Yin, R.K. (1989), Case Study Research. Design and Methods, Newbury Park: SAGE Publication, California.

Learning and Teaching Methods

The contents are presented in order to explore a sustained manner necessary to supplement the training of students in the field of research methodologies seeking to deepen concepts related to areas of most importance to the activities of demand and scientific research materials. The content of the proposed program addresses the various essential aspects of meeting these targets, particularly with regard to current topics and recent developments.

Assessment Methods

For the final grade of the student is considered continuous assessment (carrying out research/practical work report and/or tests).
The final rating is calculated according to the expression: 0.7 × (review article) + 0.3 × (working plan of the dissertation).
It is not allowed to perform (or improve) the CU in the exam season, special season or exceptional exam season.