



Experimental Design and Thesis Project

CU (Curricular Unit) characterization: CU name: Experimental Design and Thesis Project Desenho Experimental e Projeto de Tese: CB-BCM Duration: Semestral Working hours: 112 Contact hours: 38 ECTS: 4 Observations: N/A

Teacher in charge and respective teaching load in the CU:

Ricardo Parreira – 18 hours (lectures, tutorial support and evaluation)

Other teachers and respective teaching load in the CU:

Ana Paula Arez – 12 hours (lectures, tutorial support and evaluation) Luís Filipe Lopes – 12 hours (lectures, tutorial support and evaluation) Gabriela Santos-Gomes – 4 hours (evaluation)





Intended learning outcomes (knowledge, skills and competences to be developed by the students):

Within the scope of this Curricular Unit, students should acquire/develop the following skills:

1. The capacity for self-learning, critical analysis, design, implementation, adaptation, scheduling of an original and innovative research project, leading to the preparation of a Doctoral Thesis, respecting the requirements imposed by the standards of academic integrity.

2. The ability to apply the knowledge acquired in the "Scientific Communication" CU, adapting it to the specific situation of formulating plans for a Doctoral Thesis.

3. To master communication with peers, the rest of the academic community and society in general, about science, but with a more particular focus on the area of specialization that the student intends to embrace in their PhD Thesis Project, emphasizing the added value(s), scientific interest, general objectives and possible impact of the Thesis topic that the student intends to carry out.

Syllabus:

- 1. Regulations for submitting thesis plans to the IHMT.
- 2. Tutorial committees, interaction with the Academic Division (student support), thesis formats, submission of annual reports and participation in the IHMT Scientific Days.
- 3. Updating of experimental design concepts, scientific methodology, definition of the sampling dimension, and the most frequently used statistical tests.
- 4. Scheduling of the different activities according to specific objectives and definition of goals and expected results.
- 5. Planning and writing scientific projects.
- 6. Bibliographic review. Formatting bibliographical references.
- 7. Preparation, critical analysis, oral presentation and defense of doctoral thesis projects.

Teaching methodologies (including assessment):

In-class (face-to-face) interactions between lecturers and students will take place in various ways: (i) lectures with an expository component, taking advantage of powerpoint presentations (when justified), which will be planned so as to stimulate student participation, (ii) tutorial sessions and (iii) seminars (oral presentation sessions), carried out by students. The latter are public opnem sessions, where all those within the IHMT community may attend and participate.

Tutorial sessions are aimed at resolving doubts, or presenting topics specifically raised by a student/group of students. These tutorial sessions make up the majority of the time dedicated to







this course, in which the student's work is intended to be as autonomous as possible.

The Thesis Plan, presented on the basis of an oral presentation using a set of slides built for this purpose, followed by a discussion, will be the method of assessment. The students' performance in these seminars will be taken into account as part of the grade they will obtain at the end of the course.

References for consultation / mandatory existence:

• Stefan Rüger. 2016. How to write a good PhD thesis and survive the viva (*verbal defence of your written thesis*). The Open University, UK (available online at: http://people.kmi.open.ac.uk/stefan/thesis-writing.pdf)

• How to Write a Good Postgraduate Research Proposal. 2015. The Postgraduate Team, Student Recruitment & Admissions, The University of Edinburgh (available online at: http://www.ed.ac.uk/files/imports/fileManager/HowToWriteProposal090415.pdf)

• Qais Faryadi. 2012. How to Write Your PhD Proposal: A Step-By-Step Guide. *American International Journal of Contemporary Research* Vol. 2(4). 111-115 (available online at: <u>http://www.aijcrnet.com/journals/Vol 2 No 4 April 2012/12.pdf</u>)

Quinn G, Keough M. 2002. Experimental Design and Data Analysis for Biologists. Cambridge
University Press, UK. (available online at:
http://www2.ib.unicamp.br/profs/fsantos/apostilas/Quinn%20&%20Keough.pdf)

• Writing a Thesis Proposal: Independent Learning Resources. Learning Centre, The University of Sydney (available online at: https://sydney.edu.au/stuserv/documents/learning_centre/Thesis_Proposal_2012.pdf)