



INSTITUTO DE HIGIENE E  
MEDICINA TROPICAL  
DESDE 1902

## TROPICAL HEALTH RESEARCH

### *CU characterization:*

**CU name:**

Tropical Health Research

**Scientific area acronym:**

MIS

**Duration:**

Semiannual

**Working hours:**

252

**Contact hours:**

104

**ECTS:**

9

**Observations:**

Mandatory CU

### *Teacher in charge and respective teaching load in the CU:*

Rosa Teodósio – 47.5 hours

### *Other teachers and respective teaching load in the CU:*

Jorge Seixas – 3.5 hours

Patrícia Abrantes – 33 hours

Isabel Craveiro – 7 hours

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

After this unit, students should be able to:

1. List the phases of a research project.



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

2. Describe the objectives of the various types of studies and detail their features, advantages and disadvantages. Suit the type of study to the research question.
3. Use descriptive epidemiology principles (time, place and person). Define epidemic/outbreak and create a case definition. Calculate and interpret location and dispersion measurements, tables and graphics. Know how to apply statistical hypothesis tests and calculate links / differences between variables.
4. Describe the various types of sampling and calculate the sample size based on the estimated population proportion.
5. Calculate and interpret location and dispersion measures, tables and graphs. Identify the applicability conditions of statistical hypothesis tests and calculate associations/differences between variables.
6. Explain different types of sources and data collection tools, detailing what mistakes to avoid in preparing questionnaires.
7. Describe research characteristics using detailed individual and group interviews.
8. Name principles of ethics related to biomedicine.

### *Syllabus:*

- I. Information Sources and Research strategies. Ethical principles in biomedical research.
- II. Research project phases.
- III. Observational (descriptive, case-control and cohort), experimental and quasi-experimental studies. Features, advantages and disadvantages, adaptation to the research question. Epidemiological characteristics related to time, place, person; OR, RR, RA and relative difference. Bias, confounding and interaction concepts.
- IV. Sampling: sample size; inclusion and exclusion criteria; random and non-random sampling; sampling error.
- V. Selection, classification and operationalization of variables. Measures of location and dispersion. Frequency tables and graphic representations.
- VI. Statistical hypothesis testing: null and alternative hypothesis; significance level. Chi-square test, population comparison from independent samples and paired samples, ONEWAY ANOVA, correlation and regression; non-parametric tests.
- VII. The interview and self-administered questionnaire. In-depth interview and group interview and content analysis.



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### *Teaching methodologies (including assessment):*

The teaching methodology includes:

- Lectures in the classroom;
- Theoretical-practical classes with performing exercises;
- Tutorials for follow-up work and clarify doubts;

The evaluation will be done as follows:

- individual work (30% of the final grade)
- individual final test/exam (70% of the final grade)

### *References for consultation / mandatory existence:*

- Fortin, M. F. (2009). O processo de investigação da concepção à realização. (5ª ed). Camarate: LUSOCIÊNCIA – Edições Técnicas e Científicas, Lda. (obra originalmente publicada em 1996).
- Gordis, L. (2011). Epidemiologia. (4ª ed). Loures: LUSODIDACTA – Sociedade Portuguesa de Material Didático, Lda. (obra originalmente publicada em 2009).
- Hill, M. M., Hill, A. (2005) Investigação por questionário. (2ª ed). Lisboa: Edições Sílabo, Lda.
- Knapp, R.G., Miller, M. C. (1992). Clinical Epidemiology and biostatistics. Ed. Williams & Williams, Baltimore, Maryland.
- Murteira, B. J. F. (1993). Análise exploratória de dados e estatística descritiva. Ed Mc Graw-Hill, Portugal.
- Daniel, W.W. (2004). Biostatistics: a foundation for analysis in the health sciences. 8th Edition. Ed. John Wiley & Sons.
- Sheskin, D. J. (2007). Handbook of Parametric and Nonparametric Statistical Procedures. 4th Edition. Ed. Chapman & Hall/CRC.