Syllabus

Subject

Subject / Group	11196 - Training in scientific research / 1
Degree	Master's in Human Cognition and Evolution
Credits	3
Period	1st semester
Language of instruction	English

Professors

Lecturers	**Office hours for students**					
	Starting time	**Finishing time**	**Day**	**Start date**	**End date**	**Office / Building**
Fabrice Parmentier - fabrice.parmentier@uib.es	You need to book a date with the professor in order to attend a tutoring session.					

Context

This module aims to provide student with an understanding of some key aspects of scientific research covering: the search for scientific information through computerized bilbiographical tools, methods to select background reading at the start of a project, types of quantitative designs and their related methodological implications, selection of samples and statistical methods (basic frequentist statistics, 95% confidence intervals, Bayes Factor), and, if time allows, recommendations for the writing of a scientific publication.

Requirements

The module will be a refresher for students with some resarch training background and will allow students whithout this training to aquire basic notions and identify some key issues to guide their continuous learning.

Recommended

Some knowledge of research methods in social sciences are recommended . Student without notions of research methods and statistics are strongly advised to complement this module with independent reading.

Skills

Specific

* Students will learn aspects of experimental designs from the selection of information, choice of experimental design, to the choice of analysis, the implementation of statistical tests, and the rules guiding scientific writing. They will apply those skills through practical activities and assessed work.

Date of publication: 15/07/2019

Syllabus

Generic

* Students will acquire knowledge regarding key methodological issues faced by researchers in the field of cognitive and social sciences. They will become able to make decisions regarding the various steps of the research process, identify areas where they might require further training and be able to identify where to find further information.

Transversal

* You may consult the basic competencies students will have to achieve by the end of the Master's degree at the following address: http://estudis.uib.cat/master/comp_basiques/

Basic

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Content

Range of topics

Topic 1. Bibliographical resources and their use
Practical training in using key bibliographical online tools for scientists.

Topic 2. Experimental design
Description of main key design types, their pros and cons. Definition of variables, measurement issues, types of relations between variables.

Topic 3. Basic statistical techniques of inferential statistics
Basic description of descriptive statistics, correlations, and fundamentals of inferential statistics, effect sizes, 95% confidence intervals. Theoretical definitions and practical examples. Students will learn to carry out some of these analysis using statistical software (freeware JASP).

Topic 4. introduction to Bayesian statistics: The Bayes Factor
Basic theoretical introduction to the Bayes Factor, calculation of the Bayes Factor using statistical software (freeware JASP), interpretation of the Bayes Factor.

Topic 5 (if time allows). The making of a research article
Types of articles, fundamentals of scientific writing, strcuture of scientific papers, publication guidelines.

Teaching methodology

The module includes lectures as well as coursework.

In-class work activities (1 credits, 25 hours)

Modality	Name	Typ. Grp.	Description	Hours
Theory classes	Lectures	Large group (G)	Lectures covering the main topics.	20

Date of publication: 15/07/2019

Modality	Name	Typ. Grp.	Description	Hours
Practical classes	Workshop, practical training	Medium group (M)	Computer-based activities related to the use of statistical packages and bibliographical search tools	5

At the beginning of the semester a schedule of the subject will be made available to students through the UIBdigital platform. The schedule shall at least include the dates when the continuing assessment tests will be conducted and the hand-in dates for the assignments. In addition, the lecturer shall inform students as to whether the subject work plan will be carried out through the schedule or through another way included in the Aula Digital platform.

Distance education tasks (2 credits, 50 hours)

Modality	Name	Description	Hours
Individual self-study	Literature search	Students will practice the use of search tools and techniques to identify revelant literature on given topics.	10
Individual self-study	Data analysis	Students will analyze one or more a data set(s) using techniques covered in the lectures.	5
Individual self-study	Participation in practical class activities	Evaluation of the student's ability to use computer-based tools to carry out bibliographical searches and data analisis during the lecture.	5
Individual self-study	Data management and analysis	Students will practice statsitical analyses using the tools and techniques covered in the lectures	30

Specific risks and protective measures

The learning activities of this course do not entail specific health or safety risks for the students and therefore no special protective measures are needed.

Student learning assessment

Frau en elements d'avaluació

In accordance with article 33 of Regulation of academic studies, "regardless of the disciplinary procedure that may be followed against the offending student, the demonstrably fraudulent performance of any of the evaluation elements included in the teaching guides of the subjects will lead, at the discretion of the teacher, a undervaluation in the qualification that may involve the qualification of "suspense 0" in the annual evaluation of the subject".

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Data analysis

Modality	Individual self-study
Technique	Papers and projects **(retrievable)**
Description	Students will analyze one or more a data set(s) using techniques covered in the lectures.
Assessment criteria	Students will submit a report describing the results of a statistical analysis (including basic statistical tests, calculation of effect size, 95% confidence interval and Bayes Factor). Data can be analyzed using tools covered during the lectures or any other statistical package.

Final grade percentage: 90%

Participation in practical class activities

Modality	Individual self-study
Technique	Attitude scales **(retrievable)**
Description	Evaluation of the student's ability to use computer-based tools to carry out bibliographical searches and data analisis during the lecture.
Assessment criteria	Evaluation of the student's participation in class and ability to use computer-based tools to carry out bibliographical searches and data analisis.

Final grade percentage: 10%

Resources, bibliography and additional documentation

To be announced at the start of the lectures

Basic bibliography

To be announced at the start of the lectures

Other resources

Electronic resources and links to specialist software will provided during the lectures.

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