METHODS, DESIGN AND RESEARCH TECHNIQUES – Code 800148
Academic Year 2018-19

COURSE INFORMATION

Undergraduate Studies: 0812 – Degree in Psychology (Studies Plan 2009-10)
Type: Compulsory
ECTS: 6.0
Module: Basic training
Area: Statistics
Year: First
Semester: 2

INSTRUCTOR INFORMATION

Name: Miguel Ángel García Pérez
Mail: researchmethods@psi.ucm.es
Office number: Room 2105-O
Office hours: Tuesdays, 12:00 to 14:00 and 15:00 to 17:00

SYNOPSIS

COMPETENCIES

General competencies

GC6: Know and understand research methods and data analysis techniques.

GC14: Prepare oral and written psychological reports in different areas of activity.

Transversal competencies

TC1: Analysis and synthesis.

TC2: Preparation and defence of properly reasoned arguments.

TC3: Problem solving and decision making in Psychology.

TC5: Looking for information and data interpretation on social, scientific and ethical topics related to the field of Psychology.

TC6: Team work and collaboration with other professionals

TC7: Critical thinking and self- analysis.

TC9: Communication skills, learning how to communicate ideas to both, professional and non-professional audiences.

Specific competencies

SC17: Be able to measure and obtain relevant data for the evaluation of interventions.

SC18: Know how to analyse and interpret results of evaluations.

SC19: Know how to appropriately and accurately provide feedback to recipients.

TEACHING ACTIVITIES

ECTS BREAK-DOWN

This module is worth 6 ECTs, which implies 150 hours broken down as follows:

– 60 hours for class sessions (40% of the time).

– 75 hours for your own work (50% of the time).

– 15 hours for assessment (10% of the time).

CLASS SESSIONS

Class attendance is expected and useful for discussions not available elsewhere. I will present the topics in class with the help of slides. you will have copies of these slides (see below). I will also illustrate the concepts and their implications with examples of published research. Some practical class sessions might involve small-scale group experiments or data collection.

MODULE MATERIALS

A booklet with printed copies of all the slides that I will use in class sessions is available at the copy shop (located on the ground floor in Logopedia Building). I will also post additional materials on campus virtual along the semester and each new posting will be announced in class.

BRIEF DESCRIPTION:

PRE-REQUISITES

Basic proficiency in statistics is convenient to follow the module. If you need to brush up on your statistics, read Coolican's chapters 12–18 (full references given below). Consider also J.R. Vokey & S.W. Allen's easy-to-follow Thinking with Data (7th edition), which is freely available at http://people.uleth.ca/~vokey/pdf/thinking.pdf.

OBJECTIVES

TOPICS

1. Introduction to the scientific method
2. Classification of research
3. The research process
4. Validity of research and bias in research
5. Ethics in research
6. Experimental and ex post facto methods
7. Simulation methods
8. Quasi-experimental methods
9. Non-experimental (correlational) methods
10. Observational and survey methods
11. Single-subject methods and case studies
12. Reporting research results

ASSESSMENT

Module grades arise from two sources: a final exam and a project/presentation that you will complete over the semester.

Final exam

An open-note exam will be administered at the end of the semester. The exam will consist of a practical exercise in which you will answer methodological questions about a published paper that will also be provided. Some answered exams from previous years are available on Campus Virtual. ***You may bring to the exam around 10 hand-written sheets including whatever you think you will need as a reference to answer those questions***. You **must** bring a picture ID as proof of identity. The exam earns you a maximum of 7 points. A minimum score of 3 points on the exam is necessary (but not sufficient) to pass this module.

You should keep in mind that successfully answering the questions in the exam requires that you have developed skills to identify and interpret methodological aspects of the research reported in a published paper. You cannot possibly acquire such skills over a few crash study sessions right before the exam, and simply memorizing definitions of variables, types of design, etc., will not help you either. Continued work throughout the semester is essential to develop those skills, which you will also have the opportunity to exercise with the scheduled analyses and discussions of mandatory readings.

Project/presentation

You will also be evaluated on the basis of a project that you will carry out throughout the semester, and for which you will give a presentation to the rest of the class at the end of the semester. Your active participation with questions or comments during the discussion that will follow each presentation is also required. This activity is not mandatory but earns you an absolute maximum of 3 extra points, although some simple projects will not earn you that maximum. You may decide to carry out your project individually or in a team with other classmates, but I will impose limits on the size of each team according to the project you choose to carry out. I am open to hearing about proposals of any suitable type but, in principle, you have a choice among:

a) Literature search. You will compile a list of papers or other documents published on a topic of your choice during the last 5–10 years. For your search, you must use *Web of Science*, *PsycINFO*, and *Google Scholar*. Your report and presentation should at least include a classification of this literature that distinguishes theoretical papers, experimental reports, reviews, etc. Ideally, you would also identify and report major controversies in the theoretical/experimental approaches as well as hot issues in current research on that topic.

b) Bibliometric analysis. You will analyze all the papers published on a given calendar year in a specific journal (e.g., *Psychonomic Bulletin & Review* or *Psychological Science*), with an eye towards classifying the papers primarily according to the type of research and type of design that were used but also according to other categories (see Montero & León, 2007; cited below). Your report and presentation must include a summary table listing the characteristics of each paper according to the criteria.

c) Methodological analysis of a published research paper. This project implies work that is thoroughly analogous to what you will have to do in the final exam. You will pick a published paper and analyze it from a methodological point of view. Besides descriptive aspects (type of research, variables involved, design, etc), you should consider and discuss validity issues, ethical issues, and reporting issues (including the extent to which the paper provides sufficient information for replication). If appropriate, your report and presentation might also include a summary table listing strong and weak points of the research described in the paper you analyzed.
You may pick a paper of your own choice (e.g., one you had to read in other modules for other purposes, or one on a topic you are interested in), but you will have to show it to me to ensure that it is appropriate; alternatively, you may pick a paper from the list that will be available on Campus Virtual shortly. I have checked those papers for appropriateness already and the maximum score attainable with each of them is indicated on the list. To pick a paper from this list send me email to the address given above, indicating your choice of paper and the list of team members (if applicable). I will get back to you to tell you whether or not that paper is still available and whether the size of the team is adequate. Papers on this list will be assigned on a first-come first-serve basis.

d) A small-scale research project. This project implies designing and carrying out a small-scale research study of your choice, which can also be a replication of some other study. Your report must have the structure of a manuscript and follow major guidelines of APA style and it must also include in an appendix all the data that you collected. Your presentation must also cover the same material in your report (excluding presentation of the raw data, of course).

Individuals or teams **must discuss their project choice with me during the week that starts on February 18th, at the latest**. I will understand that you give up on your option for these extra points if I do not hear from you by February 25th. I must approve the team size and I will tell you the maximum score attainable with your choice of project. You must then brief me on your progress

regularly during the semester so I can monitor your work and assess your performance. **Without such regular interaction, your project will not be graded.** I will give you feedback and guidance, but you cannot expect me to provide you with the answers that you actually have to find; quite often, I will just tell you which questions you have to find the answer for and I will also tell you what parts of the paper you have to read more carefully to find them.

Subject to potential changes, and pending assignment of final dates, project presentations will take place during the evening hours (3 pm to 7 pm) from May 13th to May 17th. Thirty-minute presentations will be arranged to fill up the four hours in each session. You must attend all the presentations given in the session where your own is scheduled, and you are expected to contribute to the ensuing discussion. The written report of your project is due on May 24th but it is advisable that you have it ready by the time of your presentation so you can easily make changes or additions according to the discussion that will follow your presentation.

Final module grade

Your final module grade will be based on the sum of the points earned on the exam (a maximum of 7) and the points earned on your project/presentation (a maximum of 3). If your score on the exam is at least 3 points, grades will be assigned according to your sum score (ranging from 0 to 10) on the following scale:

[0–5): Suspenso (SS)
[5–7): Aprobado (AP)
[7–9): Notable (NT)
[9–10]: Sobresaliente (SB)

No passing grade is required on the project/presentation, but note that you will receive a failing grade (SS) if you do not earn at least 3 points on the exam regardless of your score on the project. Note also that you cannot get a grade beyond NT if you decided against carrying out a project.

If you do not pass the module in May, there will be a resit examination in June or July but there is not a second chance for a project. However, if you did work on a project during the semester and gave a presentation but you did not get the maximum score it was worth, you have the option to improve your written report and hand in the new version at the time of the resit. An additional oral presentation is not required in these cases.

Plagiarism and cheating

Plagiarism or cheating are breaches of academic integrity and are penalized. Cheating on the final exam results in dismissal from the exam and an automatic failing grade on the module. The penalty for copying word for word or cutting and pasting material from other sources into your written report is to fail the assignment, with no consequences on your score on the exam.

RESOURCES

Textbooks and resources

There is no set text, but almost all textbooks on Research Methods (in Psychology, in the Behavioral Sciences, ...) cover the module topics adequately. The following books and resources are all available in the library (or free to download or access on the web). Goodwin's is your best pick as a reference book; McGuigan's is a bit out of date but it is still a good reference book. The table underneath the list of textbooks enumerates relevant chapters in each book for each of the module topics.

Textbooks:

Breakwell, G.M., Hammond, S. & Fife-Schaw, C. (1995). *Research Methods in Psychology*. Thousand Oaks, CA: Sage.
Coolican, H. (1990). *Research Methods and Statistics in Psychology*. London, UK: Hodder & Stoughton.
Goodwin, C.J. (2010). *Research in Psychology. Methods and Design*, 6th edition. Hoboken, NJ: Wiley.
McGuigan, F.J. (1983). *Experimental Psychology: Methods of Research*, 4th edition. Englewood Cliffs, NJ: Prentice-Hall.
Schweigert, W.A. (2012). *Research Methods in Psychology. A Handbook*, 3rd edition. Long Grove, Il: Waveland.

	Goodwin	McGuigan	Schweigert	Breakwell et al	Coolican
Introduction to the scientific method	ch. 1	ch. 1–5	ch. 1	ch. 2–3	ch. 1–5
Classification of research	ch. 3				
The research process			ch. 3 and 4		
Validity of research and bias in research	ch. 5–6				
Ethics in research	ch. 2		ch. 2		ch. 20
Experimental and *ex post facto* methods	ch. 5–8	ch. 6–8 and 10–11	ch. 6 and 7	ch. 5	ch. 6 and 10
Simulation methods					
Quasi-experimental methods	ch. 10	ch. 13	ch. 8	ch. 7	
Non-experimental (correlational) methods	ch. 9	ch. 9	ch. 9		
Observational and survey methods	ch. 12		ch. 10 and 11	ch. 12 and 14	ch. 7–9
Single-subject methods and case studies	ch. 11	ch. 12	ch. 12 and 13	ch. 6	
Reporting research results	Appendix A	Appendix B	Appendix C		Appendix 1

Other resources:
– Research Methods Knowledge Base (http://www.socialresearchmethods.net/kb/contents.php)
– Montero, I., & León, O. (2007). A guide for naming research studies in psychology. *International Journal of Clinical and Health Psychology*, *7*(3), 847–862. (http://www.aepc.es/ijchp/articulos_pdf/ijchp-256.pdf)