COURSE DATA

Data Subject	
Code	36245
Name	Statistics II
Cycle	Grade
ECTS Credits	6.0
Academic year	2022 - 2023

Study (s)

Degree	Center	Acad. year	Period
1319 - Degree in Psychology	Faculty of Psychology and Speech Therapy	1	Second term

Subject-matter

Degree	Subject-matter	Character
1319 - Degree in Psychology	53 - Statistics II	Basic Training

Coordination

Name	Department
DASI VIVO, CARMEN	267 - Behavioral Sciences Methodology
OLIVER GERMES, MARIA AMPARO	267 - Behavioral Sciences Methodology

SUMMARY

Statistics II is a 6 credit course lectured in the 2nd semester of the 1st course of the degree of Psychology. The overall aim of the course is to provide procedures to respond to issues of interest to psychologists using inferential statistical analysis of data, so the course is theoretical and practical. The inferential data analysis techniques are prerequisite to other obligatory subjects of the curriculum, such as Psychometrics and Research Design, and other optional subjects. The statistical concepts are also required to carry out technical reports and empirical research in different subjects and areas of expertise as well as theoretical understanding of the foundations of empirical knowledge of the behavior.

PREVIOUS KNOWLEDGE

Relationship to other subjects of the same degree

There are no specified enrollment restrictions with other subjects of the curriculum.

Other requirements

RECOMMENDATIONS
This subject rests on the concepts and procedures previously introduced in the Statistics I subject. Having passed the Statistics, I and II subjects is a requirement for enrollment in Psychometrics, a second-year subject.

COMPETENCES (RD 1393/2007) // LEARNING OUTCOMES (RD 822/2021)

1319 - Degree in Psychology

- Students must have acquired knowledge and understanding in a specific field of study, on the basis of general secondary education and at a level that includes mainly knowledge drawn from advanced textbooks, but also some cutting-edge knowledge in their field of study.
- Students must have the ability to gather and interpret relevant data (usually in their field of study) to make judgements that take relevant social, scientific or ethical issues into consideration.
- Students must be able to communicate information, ideas, problems and solutions to both expert and lay audiences.
- Be able to describe and measure variables (personality, intelligence, attitudes, aptitudes, etc.) and cognitive, emotional, psychobiological and behavioural processes.
- Be able to measure and obtain relevant data for the assessment of interventions.
- Know how to analyse and interpret the results of assessment.
- Be able to prepare oral and written reports.
- Know and comply with professional ethics of Psychology.
- Be able to apply methodological knowledge to solve the problems arising in professional practice.
- Know the fundamentals of inferential statistics, as well as their conditions of use and application to psychology.
- Be able to apply inferential techniques to analyse psychological data through statistical software and other information technologies.

LEARNING OUTCOMES (RD 1393/2007) // NO CONTENT (RD 822/2021)

Student must:

a) Know and apply correctly inferential- statistical procedures of data analysis that are most commonly used in the process of obtaining scientific information in the field of psychology.

b) Identify and formulate the research question in terms of statistical hypothesis.

c) Select the most appropriate techniques to contrast the hypotheses, considering the characteristics of the data being operated.

d) Perform calculations using computer and other additional methods introduced in the classroom.

e) Interpret results and draw conclusions.

Express the results and conclusions in technical language understandable to nonprofessionals.

DESCRIPTION OF CONTENTS

1. Basic concepts of statistical inference

1. Introduction.
2. Sampling. Introduction and main types of sampling.
3. Sampling distribution of the mean, variance and proportion.

2. Parameter estimation

1. Point estimation: Characteristics and bias of the estimators.
2. Interval estimation.

3. Hypothesis testing

1. Definition and basic concepts.
2. Application of hypothesis testing to the case of the mean and proportion.
3. Factors affecting the rejection of the null hypothesis.
4. Statistical significance and practical relevance. Effect size.
5. Errors associated with hypothesis testing.

4. Parametric hypothesis testing

1. Introduction.
2. Contrast of two means (independent and dependent groups).
3. Contrast of two independent variances (ratio of variances).
4. Between and within subjects univariate ANOVAs. Squared means. F test. Post-hoc tests.

5. Nonparametric Hypothesis testing

1. Checking assumptions.
2. Contrasts for a group.
3. Contrast of two or more dependent and independent groups: Mann-Whitney, Kruskal-Wallis, Wilcoxon and Friedman tests.

6. Association contrasts and prediction.

1. Inference on correlation and regression analysis: hypothesis tests of the coefficients.
2. Inference on the association between categorical data: sqaure chi tests of independence and adjustment. Proportions.

7. Introducing Multivariate Statistics techniques

1. Introduction.
2 Classifications and uses.

WORKLOAD

ACTIVITY	Hours	% To be attended
Theoretical and practical classes	60,00	100
Development of group work	12,50	0
Development of individual work	12,50	0
Study and independent work	50,00	0
Preparation of evaluation activities	15,00	0
TOTAL	**150,00**	

TEACHING METHODOLOGY

The teaching of the course combine the following strategies:

(1) Exhibitions and presentations (lectures) of the contents of the subject.

(2) Practical classes based on exercises, such as data introduction and processing, or case studies.

(3) Scheduled group tutoring if necessary.

(4) Preparation of the required work independently.

The use of mobile devices, tablets and laptops will be at the disposal of the teaching methodology proposed by each teacher.

EVALUATION

The result of the student evaluation is a qualification that will oscillate between 0 and 10 points. This qualification depends of the following parts:

System of Evaluation 1 (ES1): ESTIMATION OF THEORETICAL AND PRACTICAL CONTENTS BY MEANS OF ORAL OR WRITTEN TESTS, AND SKILL PERFORMANCE. It will represent 85% of the final qualification. It will consist of two sections: A) continuous evaluation during the scheduled period of classes, with a maximum of 15% and, B) final evaluation, with a maximum qualification of 70%, in which it will be necessary to achieve a minimum of 50% to pass the course. Section B is recoverable in second call.

System of Evaluation 2 (ES2): ORAL OR WRITTEN PRESENTATION OF REPORTS ABOUT INDIVIDUAL OR GROUP WORKS, CLINICAL CASES, RESOLUTION OF PROBLEMS OR MANAGEMENT OF DIAGNOSTIC TESTS. It will add a maximum of 15% of the final qualification. It is necessary to achieve a minimum of 50% in this section to pass the course. This section is recoverable in second call.

Additional considerations:

1. The described sections will be summed only when a student reach the minimum required conditions.

2. If a student do not pass some of the compulsory sections in the first call, the points of the other sections will be save for the second call.

3. Dates of realisation of the tests of the Section A of the ES1 will be established by the teacher along the course. They can be individual or groupal evaluations about the topics listed in the Course Guide.

4. The qualification of the course follow the Normative of Qualifications of the University of Valencia (ACGUV 108/2017). In accordance with it, the following scale of qualification will be used:

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• Of 0 to 4.9: fail

• Of 5 to 6.9: pass

• Of 7 to 8.9: remarkable

• Of 9 to 10: excellent or excellent with honors

As stated in the normative about the assignement of "Excellent with honors" qualification, it will be for strict order of numerical mark. In case of tie, the qualification will be assigned to the student with higher numerical mark in the Section B of the ES1. If it follows the tie, the higher of the ES2 and, finally the higher of the Section A of the ES1. If all of them are equal, teacher can add an aditional exam.

5. The copy or plagiarism of any task of the evaluation will suppose the impossibility to pass the course. The relevant disciplinary measures may be applied. In the event of fraudulent practices, the Action Protocol for fraudulent practices at the University of Valencia will be applied (ACGUV 123/2020): https://www.uv.es/sgeneral/Protocols/C83sp.pdf

6. Take into account that, in accordance with the article 13.d) of the Statute of the University Student (RD 1791/2010, of 30 of December), a student is to owe abstain in the utilisation or cooperation in fraudulent procedures in the tests of evaluation and works that he realise, or in official documents of the university.

7. In the individual or colective tutorials, the professor can to ask a student for questions in order to verify the degree of participation and acompliance of the objectives of a task of the course. If not accepting this verification, the student will not pass the task or activity in question .

8. The marks obtained in the first call will be incorporated in the minutes of the subject according to the following rules:

- If there is no qualification evaluation section with greater weight, the rating will not be presented, regardless of the rest.
- If there's rating in the evaluation section with greater weight and does not reach the minimum requirements shall be entered SUSPENSE and base 10 numerical grade qualification of this section.
- If there's rating in the evaluation section with greater weight, and this exceeds the minimum requirements, but those requirements are met in any of the remaining sections consist SUSPENSE and numerical note will be based 10 qualifying paragraph by which does not exceed the subject.

9. SECOND CALL, proceed according to the following rules:

- Only fit the PRESENTED NO option when has not been presented to more than one of the sections of assessment, including among these the highest weighting.
- If scores in all sections of assessment and no minimum requirements are met in any of them, and the note will consist SUSPENSE base 10 corresponding to the section that has not been surpassed. If more than one section, the unsurpassed, consist the maximum score within the suspense in base 10.
- If you do not exceed one or more of the minimum requirements and lack a section evaluation shall be recorded and numerical note SUSPENSE base 10 of qualification paragraph not exceeded.
- If two evaluation points are exceeded and there is a third party that has not presented evidence evaluation shall be recorded SUSPENSE and as rating, the average score being 0.0 part not presented (maximum possible 4.9).
- If the test higher weight is exceeded, but evidence is lacking in one or more of the other sections, consist SUSPENSE. Parts are added together and: a) if the sum is less than 5, it will be recorded as a result; b) if the sum is greater than 5, shall be recorded 4.9.

10. If the subject is passed in first call, the student will not be able to examine in second call with the purpose to improve his note.

11. The consultation and appeal of the qualification obtained shall be subject to the provisions of "Reglament d'avaluació i qualificació de la Universitat de València per a títols de grau i màster (ACGUV de 30 de maig de 2017)".

REFERENCES

Basic

- Pardo, A., Ruiz, M.A. y San Martín, R. (2015). Análisis de datos en ciencias sociales y de la salud I (2ª edición). Madrid: Síntesis.
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- Bock, Velleman y de Veaux (2010, 3rd ed.). Stats: Modeling the World. Pearson Education.
- León, O.G. y Montero, I. (2015). Métodos de investigación en psicología y educación (4ª ed.). Madrid: McGraw-Hill.

Additional

- Amón, J. (2008). Estadística para psicólogos. Madrid: Pirámide.
- Aron, A. y Aron, E.N. (2001). Estadística para psicología. Buenos Aires: Pearson Education.
- Goss-Sampson, M. A. (2019). Statistical Analysis in JASP 0.10.2: A Guide for Students.
- Pardo, A y Ruiz, M.A. (2009). Gestión de datos con SPSS Statistics. Madrid: Síntesis.
- Ximénez, C y Revuelta, J. (2022). Análisis de datos en Lenguaje R. UAM ediciones.