



Universitat de Lleida

# DEGREE CURRICULUM **INFERENTIAL STATISTICS IN PSYCHOLOGY**

Coordination: MARCH LLANES, JAUME

Academic year 2019-20

## Subject's general information

Subject name	INFERENTIAL STATISTICS IN PSYCHOLOGY			
Code	102909			
Semester	1st Q(SEMESTER) CONTINUED EVALUATION			
Typology	Degree	Course	Character	Modality
	Bachelor's Degree in Psychology	2	COMPULSORY	Attendance-based
Course number of credits (ECTS)	6			
Type of activity, credits, and groups	Activity type	PRAULA		TEORIA
	Number of credits	2.4		3.6
	Number of groups	2		1
Coordination	MARCH LLANES, JAUME			
Department	PSICOLOGIA			
Important information on data processing	Consult <a href="#">this link</a> for more information.			

Teaching staff	E-mail addresses	Credits taught by teacher	Office and hour of attention
MARCH LLANES, JAUME	jaume.march@udl.cat	8,4	

## Learning objectives

Learning outcomes:

- Know how to differentiate the objectives of descriptive statistics and inferential statistics.
- Understand the sample distribution as a concept that allows you to relate a statistic and a parameter.
- Differentiate between estimation of time and interval parameters.
- Understand the different concepts related to the contrast of hypotheses. Hypothesis and statistical decision. Contrast statistic Types of errors in the decision. Power. Critical values and level of significance. Type of contrast
- Correctly put forward a hypothesis contrast for a proportion, an average, and a variance.
- Prepare and perform the relevant calculations for the study of the relationship between two categorical variables.
- To formulate and carry out the relevant calculations for the study of the relationship between an independent variable dichotomous and a quantitative dependent variable.
- To formulate and carry out the relevant calculations for the study of the relationship between an independent political variable and a quantitative dependent variable.
- Prepare and perform the relevant calculations for the study of the relationship between two quantitative variables.
- Properly plan a study with several independent variables, and perform the calculations applying the General Linear Model using a statistical package.
- Properly plan a study with several independent variables, and perform the calculations by applying Classification Trees.

## Competences

Basic skills:

CB1 Owning and understanding knowledge in a study area that is based on the general secondary education base, and it is often found at a level that, while supported by advanced textbooks, also includes some aspects that involve relevant knowledge from the vanguard of his field of study.

CB2 Apply their knowledge to their work or vocation in a professional way and possess the competencies that are usually demonstrated through the elaboration and defense of arguments and the resolution of problems within their area of study.

CB3 Ability to gather and interpret relevant data (usually within its area of study) to issue judgments that reflect on relevant issues of a social, scientific or ethical nature.

CB4 Power to convey information, ideas, problems and solutions to a specialized and non-specialized audience.

General Competences:

CG1 Develop the ability to adapt to new situations and solve problems in an effective way.

CG2 Develop the ability to work in multidisciplinary teams and collaborate efficiently with other professionals.

CG3 Show abilities for interpersonal relationships.

CG5 Demonstrate critical capacity to make relevant decisions.

CG6 Reflect on own limitations in a self-critical way, considering the possibility of requesting interdisciplinary collaborations.

CG7 Act with creativity, research culture and professional communication.

CG9 Recognize diversity and difference as a structural element of the human being, while recognizing, understanding and respecting the cultural complexity of today's society.

## Specific Competences:

CE1 Identify and analyze the characteristics and needs of people, groups and organizations, as well as relevant contexts for the requested service.

CE2 Plan the evaluation of programs and / or psychological interventions, selecting Indicators and appropriate techniques.

CE4 Analyze and interpret the results of the psychological evaluation.

CE6 Respond and act appropriately and professionally, taking into account the attitudes and values of the profession, as well as its ethical and ethical code, in each and every one of the intervention processes.

CE7 Provide information to users and establish an appropriate interpersonal relationship, taking into account the different contexts of professional relationship.

CE8 Prepare technical reports, oral and written, about the results of the process of evaluation, research or services demanded, respecting the ethical commitment that demands the dissemination of psychological knowledge.

CE9 Use the different documentary sources in psychology, show a mastery of the strategies necessary to access information and assess the need for documentary update.

CE10 Manage, analyze and interpret data in the frameworks of disciplinary knowledge typical of the different fields of psychology.

CE11 Making decisions critically about the choice, application and interpretation of the results derived from the different methods of psychological research.

CE12 Disseminate knowledge derived from the theoretical reviews and the results of psychological research.

## Transversal Competences:

CT1 Acquire adequate oral and written comprehension and expression of Catalan and Spanish.

CT3 Acquire training in the use of new technologies and information and communication technologies.

CT5 Acquire essential notions of scientific thought.

## Subject contents

Block 1 Fundamentals of inferential statistics

C1. From descriptive statistics to inferential statistics.

C2. Discrete and continuous probability distributions. Sample distribution

C3. Confidence intervals. Estimation of parameters.

C4. Contrast of hypothesis.

Block 2 Univariate inferential statistics.

C5. Categorical data

C6. Comparison of 2 averages.

C7. Sample size required.

C8. ANOVA. ANCOVA

C9. Linear regression. Multiple linear regression Logistic regression.

Block 3 Multivariate inferential statistics.

C9. Size of effects Metanalysis.

C10. Classification models. Cluster Techniques and Classification Trees.

## Methodology

- Master classes
- Work in group
- Written work
- Resolution of practical problems

## Development plan

Formative activity

Hours allocated to the training activity (classroom 60/ Individual90)

Theoretical classes in person	34	20
Practical classes in person	21	15
Tutorials	5	5
Reading and analysis of texts	0	15
Elaboration of group work	0	15
Study and preparation of evaluation tests	0	15
	60	90

## Evaluation

type of test	%	week
FINAL test	45	s16-s17 + REC s18
BLOC 1 - october	10	
BLOC 2 (c5-c7)- november	15	
Practical BLOC 2	10	s12~
Practical FINAL	20	s16-s17

- The final test FINAL has a recovery test.
- The practical tests represent 30% of the total of the note.
- The practical tests include the delivery of the dossiers of practices that will be indicated
- The approved condition is obtained exceeding the 50% of the total, with condition also to surpass 40% on the FINAL test.

alternative evaluation:

Test	%	week
FINAL	70	16-17 + REC 18
Practical	30	16-17

The approved condition is obtained exceeding the 50% of the total, with the condition of also to surpass 40% on the FINAL test.

## Bibliography

Recommended bibliography:

Miguel Ángel Martínez González (dir.), Almudena Sánchez Villegas (dir.), Estefanía Toledo Atucha (dir.), Francisco Javier Faulín Fajardo (dir.) Bioestadística amigable. Elsevier España. 2014 ISBN: 978-84-9022-500-4

Basic bibliography:

<https://stattrek.com/>

Zaiats V., Calle L., Presas, R. (1998) Probabilitat i estadística: exercicis I. Vic : Eumo. Només capítol 4

Zaiats V., Calle L. (2001) Probabilitat i estadística: exercicis II. Bellaterra : Universitat Autònoma de Barcelona. Tots els capítols (del 5 a 9)

Per una introducció aplicada al programa SPSS hi ha molts llibres a la biblioteca amb un contingut semblant.

Introductory bibliography:

Aron, A. i Aron, E.N. (2001) Estadística para Psicología. Buenos Aires: Pearson Educación,

Botella, J., León, D.G. & San Martín, R. (2001). Análisis de datos en psicología I. Madrid: Pirámide.

Domènech, J.M. y Granero, R. (2008). Anàlisi de dades en Psicologia per a la recerca en Psicologia. Vol. 1: Fonaments. Barcelona: Signo.

Domènech, J.M. y Granero, R. (2008). Anàlisi de dades en Psicologia per a la recerca en Psicologia. Vol. 2: Models estadístics bàsics. Barcelona: Signo.

Guàrdia, J.; Freixa, M.; Però, M. & Turbany, J. (2008). Análisis de Datos en Psicología (2ª Edición). Madrid: Delta.

Losilla, J.M., Navarro, J.B., Palmer, A., Rodrigo, M.F. y Ato, M. (2005). Del contraste de hipótesis al modelado estadístico. Girona: Documenta Universitaria (EAP, S.L.). ISBN: 84-96367-19-3

Salafranca, Ll., Sierra, V., Núñez, M.I., Solanas, A. & Leiva, D. (2005). Análisis estadístico mediante aplicaciones informáticas. SPSS, StatGraphics, Minitab y Excel. Barcelona: Edicions de la Universitat de Barcelona.

Spiegel, M. (2001). Teoría y problemas de probabilidad y estadística. México: McGraw-Hill.