COURSE DATA

Data Subject

Code	33801
Name	Statistics
Cycle	Grade
ECTS Credits	6.0
Academic year	2019 - 2020

Study (s)

Degree	Center	Acad. year	Period
1318 - Degree in Geography and the Environment	Faculty of Geography and History	2	First term

Subject-matter

Degree	Subject-matter	Character
1318 - Degree in Geography and the Environment	622 - Statistics	Basic Training

SUMMARY

Statistical methods applied to the analysis of the geographical information, by means of the managing of the statistical usual software. The geographical information and its sources. Descriptive statistics and construction of indicators. The statistical inference. The normal distribution. The work with samples. Contrast of hypothesis. Comparisons, relations and regressions. The spatial statistics.

The subject tries to transmit to the student the basic concepts of the statistics applied to geographical problems in order to understands its foundations and the technics, so that the student could decide the one/s that better fits to specific problems as well as to enhance the autonomous learning to extend his knowledge on the topic.

PREVIOUS KNOWLEDGE

Relationship to other subjects of the same degree

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

Other requirements

It is suitable knowledge of mathematics and of computer science at user level (Excel and / or SPSS).

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

1318 - Degree in Geography and the Environment

- Have capacity for analysis and synthesis.

- Have oral and written communication skills in one's own language and in a foreign language.

- Be able to work independently.

- Be able to work in interdisciplinary teams.

- Show commitment to the values of gender equality, interculturality, equal opportunities, universal access for people with disabilities, the culture of peace, democratic values and solidarity.

- Be able to learn independently and show creativity, initiative and entrepreneurship. Be able to resolve unforeseen situations.

- Show motivation for quality, responsibility and intellectual honesty.

- Be able to produce statistical information. Know how to use statistical software.

- Be able to communicate effectively with non-experts.

- Learn about geographical history and thinking.

- Learn about the time and space dimensions in the explanation of social, territorial and environmental processes.

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

- To interpret the statistical descriptive information, so much numerical as graph

- To know the different statistical basic technologies to be capable of choosing those that answer better to the raised problem

- To present information using the most suitable tools of descriptive statistics

- To know the basic notions of probability to understand the methods of sampling and the statistics inferencial

- To use the procedures of the statistics inferencial to estimate the relation or not between variables.

- To know the usefulness of the multivariable analysis to answer to geographical diverse problems

DESCRIPTION OF CONTENTS

1. Statistics and geography

Statistical analysis in Geography: description and hypothesis testing. Sources and types of measurement data. Database. Types of variables.

2. Descriptive Statistics

Presentation and interpretation of data: qualitative and quantitative variables. Graphs and charts: bar charts, pie charts, histograms. Kurtosis. Box plots. Time series analysis.

The description of variables. Measures of central tendency. Fashion, mean and median. Measures of dispersion: quartiles, interquartile range, variance and standard deviation, coefficient of variation. Moving averages and time series.

3. Inferential Statistics

Basic principles of probability. Probability distributions. The normal distribution. Applications of the standard normal distribution.

Sampling at the geographic research. Sampling rates. Sample statistics. Sampling error and sample size. Parameter estimation. Hypothesis testing, significance levels, null and alternative hypotheses.

Comparison test: Mann-Whitney, Student t, Chi Squared.

Test of relationship: r Pearson and Spearman Rho

Regression analysis: linear and nonlinear models; and correlation coefficients of determination.

4. Spatial Statistics

Spatial data: points, lines and areas. Descriptive statistics of spatial data. Patterns and spatial relationships: nearest neighbor analysis; spatial autocorrelation (Moran).

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WORKLOAD

ACTIVITY	Hours	% To be attended
Theory classes	30,00	100
Computer classroom practice	15,00	100
Other activities	15,00	100
Preparation of evaluation activities	20,00	0
Preparing lectures	10,00	0
Preparation of practical classes and problem	60,00	0
TOTAL	150,00	

TEACHING METHODOLOGY

Utilization of IT basic tools for the learning of the statistics. Work in class (theory) and at laboratory of computer science.

The students will have to realize out of the hours of class practical exercises of application of the acquired knowledge and follow the examples that will explain in class. The basic necessary information will be facilitated in class or throught the Virtual Classroom.

EVALUATION

The score is derived as follows assessable balancing the various elements:

a) Exam: 65%

b) Dossier of practical exercises and complement activities: accounting for 35% of this item is without exception the necessary condition to have delivered such practices inexcusable and without exception through the virtual classroom and within the deadlines.

c) It is necessary to obtain a minimum mark of 4.00 in the examination for the qualification of practices considered in the computation of the final grade. Not obtained the minimum mark of 4.00 in the exam, the final grade will be obtained in the examination.

The notes obtained in the section of exercices and complement activities will be consdered as part of the continous evaluation. Them, this note will be considered as inrrecoverable. The note obtained wil apply as well in second as in the first convocatory

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REFERENCES

Basic

- Peña, D. y Romo, J. (1999): Introducción a la estadística para las ciencias sociales, Madrid, McGraw Hill

Additional

- García Ferrando, M. (1999): Socioestadística: introducción a la estadística en Sociología, Madrid, Alianza

- Montero, J.M. (2007): Problemas resueltos de estadística descriptiva para ciencias sociales, Madrid, Paraninfo.

- Murgui, J.S. y Escuder, R. (2001): Estadística aplicada: economía y ciencias sociales, Valencia, Tirant lo Blanc

- Murgui, J.S. et al. (2001): Ejercicios de estadística: Economía y Ciencias Sociales, Valencia, Tirant lo Blanc

- Ritchei, F.J. (2008): Estadística para las Ciencias Sociales, Madrid, McGraw Hill

- Bisquerra, R. (1989): Introducción conceptual al análisis multivariable: un enfoque informático con los paquetes SPSS-X, BMDP, LISREL y SPAD, Barcelona, Publicaciones universitarias

- Lèvy, J.P. et al. (2003): Análisis multivariable para las ciencias sociales, Madrid, Pearson

- Mateo, M.J. (1987): Estadística en investigación social, Madrid, Paraninfo.

- Mullor, R. y Fajardo, M.D. (2000): Manual práctico de estadística aplicada a las ciencias sociales, Barcelona, Ariel.

- Sanchez, J.J. (ed) (1984): Introducción a las técnicas de análisis multivariable aplicadas a las ciencias sociales, Madrid, Centro de Investigaciones Sociológicas.

- Spiegel, M.R. (1991): Estadística, Madrid, McGraw Hill

ADDENDUM COVID-19

This addendum will only be activated if the health situation requires so and with the prior agreement of the Governing Council

English version is not available