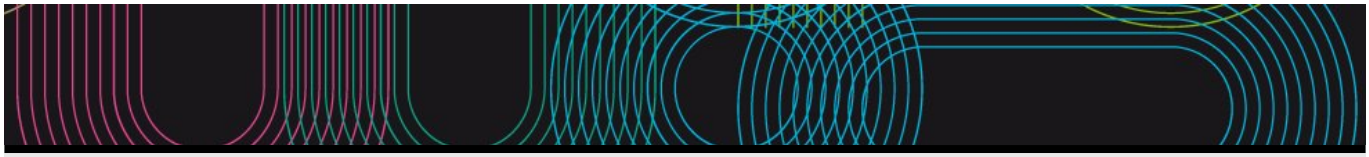

IDENTIFYING DATA				
Multivariate Analysis				
Subject	Multivariate Analysis			
Code	P02M156V01109			
Study programme	Máster Universitario en Investigación en Actividad Física, Deporte y Salud			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	5	Mandatory	1st	1st
Teaching language	Spanish			
Department				
Coordinator	Iglesias Pérez, María Carmen			
Lecturers	Iglesias Pérez, María Carmen			
E-mail	mcigles@uvigo.es			
Web				
General description	Knowledge and application of major multivariante statistical techniques which include multiple regression, discriminant analysis and factor analysis.			

Training and Learning Results	
Code	
A1	Own and understand knowledge that provide a base or an opportunity to be original at the develop or application of ideas, often in a research context.
A2	The students known to apply the acquire knowledge and be able to solve problem in new environment or less known in wider contexts (or multidisciplinary) related with their study area.
A3	The students known to integrate knowledge and confront the complexity of formulate judgments from information that, been incomplete or limited, include reflexions about social and ethics responsibilities linked to the application of their knowledge and judgments.
A5	The students own the ability of learn to continuos studying, in wide range, on a self-directed and autonomous way.
B1	Recognize and learn the study field of physical activity, health and sports, acquiring enough of abilities and methods of researching en these areas.
B2	Be able to devise, design, put in to practice and adopt a research process rigorously academics in the physical activity, health and sports study ambit.
B4	Critically analyze, evaluate and synthesize new and complex ideas in the physical activity, health and sports study ambit.
C10	Manage software packages for the introduction and data analyze collected in the physical activity, health and sports study ambit.
C11	Be able to select on a correct way the analyze model and appropriate data for the research design most used in the physical activity, health and sports study ambit.
C12	Known and used on a correct way the necessary procedures to perform the initial treatment and the data descriptive analyze.
D1	Critically assess the knowledge, the technology and the available information to solve problems.
D2	Effectively communicate in academic and informative ambits ideas and concepts linked with the physical activity, health and sports studies.
D3	Be able to promote in academic and professional contexts activities to improve the technological advance, social and cultural, in physical activity, health and sports sciences field.
D4	Use basic tools of information and communication technologies (ICTs) needed for their profession exercise and for the lifelong learning.

Expected results from this subject	
Expected results from this subject	Training and Learning Results

To know and use the techniques of multivariate data analysis.	A1 A2 A3 A5 B1 B2 C10 C11 C12 D1 D2 D3 D4
To know how to analyze and interpret the results.	A1 A2 A3 A5 B1 B2 B4 C10 C11 C12 D1 D2 D3 D4

Contents

Topic	
1. Multivariate methods I.	- Simple andr Multiple linear regression - Logistic regression - Discriminant analysis
2. Multivariate methods II.	- Principal Component Analysis - Factor analysis - Multidimensional scaling

Planning

	Class hours	Hours outside the classroom	Total hours
Lecturing	10	10	20
Practices through ICT	15	15	30
Autonomous problem solving	0	15	15
Mentored work	0	50	50
Objective questions exam	1	9	10

*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

Methodologies

	Description
Lecturing	Explanation of the major concepts about each multivariate statistical technique.
Practices through ICT	Application of multivariate techniques to data sets with SPSS software.
Autonomous problem solving	Written presentation of the activities and exercises proposed in the computer classes.
Mentored work	The student will propose and conduct a work about statistical analysis of a real data set by using one or more of multivariate techniques of matter. The work will be done individually or in small groups.

Personalized assistance

Methodologies	Description
Mentored work	Resolution of doubts by using the Moodle platform, email or tutoring hours with the professor. Tutoring may be carried out by telematic means by appointment. - Virtual offices of professors in Remote Campus: https://campusremotouvigo.gal/faculty/993 Mª Carmen Iglesias Pérez: Office 1291 - Ask for an appointment using email: mcigles@uvigo.es

Assessment

	Description	Qualification	Training and Learning Results			
Autonomous problem solving	Practical activities carried out continuously.	20	A1 A2 A3 A5	B1 B2 B4	C10 C11 C12	D1 D2 D3 D4
Mentored work	It is necessary a minimum of 4 on 10 so that it was evaluable.	40	A1 A2 A3 A5	B1 B2 B4	C10 C11 C12	D1 D2 D3 D4
Objective questions exam	Face-to-face test examination. To consult the material of the matter is possible. It is necessary a minimum of 4 on 10 so that it was evaluable.	40	A1 A5	B1	C11	D1

Other comments on the Evaluation

Continuous assessment

The project with real data will be 40% of the score.

The test exam will be another 40%.

In each one of these two parts is necessary to reach 4 out of 10.

The minimum weighted average to pass the subject is 5 out of 10.

The reports or activities of practices will be 20% of the score. The mark of these practical activities is maintained in the second announcement.

Global assessment

Theory and exercises exam.

Sources of information

Basic Bibliography

Hair, J.F., Anderson, R.E., Tatham, R.L. y Black, W.C., **Análisis Multivariante**, 5ª, Madrid: Prentice Hall, 2000

Guisande, C. Vaamonde, A. y Barreiro,A., **Tratamiento de datos con R, Statistica y SPSS**, Diaz de Santos, 2011

Complementary Bibliography

Thomas, J.R. y Nelson, J.K., **Métodos de investigación en Actividad Física**, Paidotribo, 2007

Pérez López, C., **Técnicas de análisis multivariante de datos: Aplicaciones con SPSS**, Madrid: Pearson Prentice Hall, 2004

Visauta, B. y Martori, J.C., **Análisis estadístico con SPSS para Windows (vol. II). Estadística Multivariante**, Madrid: McGraw-Hill, 2003

Camacho, J., **Estadística con SPSS (versión 12) para Windows**, Madrid: Ra-Ma, 2005

Arce, C. y Real, E., **Introducción al Análisis Estadístico con SPSS para Windows**, Barcelona: PPU, 2001

Gardner, R., **Estadística para psicología usando SPSS**, Madrid : Pearson, 2003

Abraira, V. y Pérez de Vargas, A., **Métodos Multivariantes en Bioestadística**, Madrid: Centro de Estudios Ramón Areces, 1996

Catena, A., Ramos, M. y Trujillo, H., **Análisis multivariado. Un manual para investigadores**, Madrid: Biblioteca Nueva, 2003

Mateos- Aparicio,G. y Hernández, A., **Análisis multivariante de datos : cómo buscar patrones de comportamiento en Big Data**, Madrid : Pirámide, 2021

Aldás Manzano, J., **Análisis multivariante aplicado con R**, Madrid : Alfacentauro, 2017

Cea, M.A., **Análisis multivariable. Teoría y práctica en la investigación social**, Madrid: Síntesis, 2002

Everitt, B. y Dunn, G., **Applied Multivariate Data Analysis**, 2ª, Wiley, 2001

Landau, S y Everitt, B., **A Handbook of statistical analyses using SPSS**, Boca Raton (Florida): Chapman & May, 2004

Ho, R., **Handbook of univariate and multivariate data analysis and interpretation with SPSS**, Boca Raton (Florida): Chapman & Hall, 2006

Recommendations

Subjects that it is recommended to have taken before

Exploratory Data Analysis and Inferential Analysis/P02M156V01108