



IDENTIFYING DATA

(*)Análise Multivariante

Subject	(*)Análise Multivariante			
Code	P02M156V01109			
Study programme	(*)Máster Universitario en Investigación en Actividade Física, Deporte e Saúde			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	5	Mandatory	1st	1st
Teaching language	Spanish			
Department				
Coordinator	Iglesias Pérez, María Carmen			
Lecturers	Iglesias Pérez, María Carmen Vaamonde Liste, Antonio			
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Web				
General description	Knowledge and application of major multivariate statistical techniques which include multiple regression, discriminant analysis and factor analysis.			

Competencies

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 continuous 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.

Learning outcomes

Expected results from this subject	Training and Learning Results
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To know the main multivariate statistical technics used in Physical Activity and Sport Sciences.	A1 A2 A3 A5 C10 C11 C12 D1 D2 D3 D4
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To use SPSS software to analyze multivariate data in Physical Activity and Sport Sciences.	A1 A2 A3 A5 B1 B2 B4 C10 C11 C12 D1 D2 D3 D4
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Contents

Topic	
1. Multivariate methods I.	- Multiple linear regression - Logistic regression - Multinomial logistic regression - Poisson regression - Discriminant analysis
2. Multivariate methods II.	- Principal Component Analysis - Factor analysis - Cluster Analysis - Multidimensional scaling

Planning

	Class hours	Hours outside the classroom	Total hours
Master Session	10	10	20
Practice in computer rooms	15	15	30
Autonomous troubleshooting and / or exercises	0	15	15
Tutored works	0	50	50
Multiple choice tests	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
Master Session	Explanation of the major concepts about each multivariate statistical technique.
Practice in computer rooms	Application of multivariate techniques to data sets with SPSS software.
Autonomous troubleshooting and / or exercises	Written presentation of the activities and exercises proposed in the computer classes.
Tutored works	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 attention

Methodologies	Description
Tutored works	Doubts will be solved by means of the email or individual tutorials.

Assessment

	Description	Qualification	Training and Learning Results			
Autonomous troubleshooting and / or exercises	Activities of continuous evaluation.	20	A1	B1	C10	D1
			A2	B2	C11	D2
	They are not recoverable in second announcement.		A3	B4	C12	D3
			A5			D4
Tutored works	It is necessary a minimum of 4 on 10 so that it was evaluable.	40	A1	B1	C10	D1
			A2	B2	C11	D2
			A3	B4	C12	D3
			A5			D4
Multiple choice tests	Face-to-face test examination.	40				
	To consult the material of the matter is possible.					
	It is necessary a minimum of 4 on 10 so that it was evaluable.					

Other comments on the Evaluation

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 reports or activities of practices will be 20% of the score. They are not recoverable in second announcement.

Sources of information

Bibliografía básica:

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

Guisande, C. Vaamonde, A. y Barreiro, A. (2011) Tratamiento de datos con R, Statística y SPSS. Díaz de Santos.

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

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

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

Bibliografía complementaria:

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

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

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

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

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Martínez Árias, R. (1999). El análisis multivariable en la investigación científica. Madrid: La Muralla.

Peña, D. (2002). Análisis de datos multivariantes. Madrid: McGraw-Hill.

Pérez López, C. (2005). Técnicas estadísticas con SPSS 12: aplicaciones al análisis de datos. Madrid: Pearson Educación.

Ritchev, F. J. (2002). Estadística para las ciencias sociales. Madrid : McGraw-Hill.

Visauta, B. (2003). Análisis Estadístico con SPSS para Windows . Madrid: McGraw-Hill.

Recommendations

Subjects that it is recommended to have taken before

(*)Análise Exploratoria de Datos e Análise Inferencial/P02M156V01108
