UniversidadeVigo

Training and Learning Results

Code

Subject Guide 2023 / 2024

IDENTIFYIN	G DATA				
Mathematic	s: Mathematics				
Subject	Mathematics:				
	Mathematics				
Code	V03G020V01104				
Study	Grado en				
programme	Administración y				
	Dirección de				
	Empresas				
Descriptors	ECTS Credits		Choose	Year	Quadmester
	9		Basic education	1st	lst
Teaching	#EnglishFriendly				
language	Spanish				
	Galician				
Department					
Coordinator	Sanmartín Carbón, Esperanza				
	Hervés Estévez, Javier				
Lecturers	Hervés Estévez, Javier				
	Quinteiro Sandomingo, María del Carme	en			
	Sanmartín Carbón, Esperanza				
	Vázquez Pampín, María del Carmen				
E-mail	esanmart@uvigo.es				
	javiherves@uvigo.es				
Web					
General	Familiarize the student with the basic m	nathematical	tools for Economics.		
description	English Friendly subject: International s	tudents may	request from the tea	chers:	
	a) resources and bibliographic reference	es in English,	b) tutoring sessions	in English, c)	
	exams and assessments in English.				

B1	Ability to analyse and synthesise				
B5	Oral and written communication skills.				
B6	Communication skills through the Internet, as well the ability to use multimedia tools for remote communication				
B14	Capacity to apply the theoretical and practical knowledge acquired in a specialised academ	ic contex	t		
C7	Acquire and understand knowledge regarding: The main instrumental techniques applied to	the busi	ness context		
C12	2 Solve problems effectively and make decisions using the appropriate quantitative and qualitative methods, including the identification, expression and solution of business problems				
Exp	ected results from this subject				
Expected results from this subject			Training and Learning		
			Results		
(*)[]	Comprender as técnicas matemáticas básicas, necesarias para a modelización do	B1	C7		
com	portamento económico.	B6	C12		
(*) Avaliar, utilizando técnicas matemáticas, as consecuencias das distintas alternativas de acción B1 C7			C7		
e se	leccionar as máis idóneas.	B5	C12		
		B6			
		B14			
(*)[]	Ser capaz de formular modelos simples de relación das variables económicas baseados no	B1	C7		
man	exo da álxebra lineal e do cálculo diferencial.	B5	C12		
		B6			
		B14			

(*) Ter habilidades para argumentar de modo rigoroso, coherente e intelixible, tanto na expresión	B1	C7
oral como na escrita.	B5	C12
	B6	

Contents	
Торіс	
Preliminaries.	Mathematical symbols. Real functions of real variable. Elementary functions. Basic mathematical calculations.
Functions of a real variable.	Limits of real functions of real variable. Continuity of real functions of real variable. Theorems related to global continuity. Derivative of a function at a point. L'Hôpital's rule. Rolle and mean value theorems. Higher order derivatives and relative extremes. Concavity and convexity.
Integration.	Areas under curves. Fundamental theorem of integral calculus. Primitives.
Matrix calculus.	Matrices. Determinant of a square matrix. Systems of linear equations. Eigenvalues of a square matrix. Quadratic forms.
Derivatives of functions of several variables.	Introduction. Vectors. Partial derivatives. Differentiable functions. The chain rule. Higher order derivatives. Homogeneous functions. Euler's theorem.
Optimization.	Concave and convex functions. Unrestricted optimization. Optimization with equality constraints.

Planning					
	Class hours	Hours outside the classroom	Total hours		
Lecturing	37	37	74		
Problem solving	33	50	83		
Seminars	0	8	8		
Autonomous problem solving	1.5	7	8.5		
Autonomous problem solving	1.5	7	8.5		
Autonomous problem solving	1.5	6	7.5		
Essay questions exam	3	32.5	35.5		
*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.					

Methodologies	
	Description
Lecturing	Activity in which problems and/or exercises related to discipline are formulated. Students must
	autonomously develop the analysis and resolution of problems and/or exercises.
Problem solving	Activity in which problems and/or exercises related to the subject are formulated. Students must
	develop the appropriate or correct solutions through the exercise of routines, the application of
	formulas or algorithms, the application of transformation procedures of the available information
	and the interpretation of the results. It is usually used as a complement to the lecturing.
Seminars	Interviews that the student body maintains with the teaching staff for the advice/development of
	activities of the subject and the learning process.
Autonomous problem	Activity in which problems and/or exercises related to discipline are formulated. Students must
solving	autonomously develop the analysis and resolution of problems and/or exercises.
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Autonomous problem	Activity in which problems and/or exercises related to discipline are formulated. Students must
solving	autonomously develop the analysis and resolution of problems and/or exercises.

Methodolog	ies Description		
Seminars	All information regarding the tutoring timetable and the application procedure will be available on the platform of the subject (Moovi).		
Assessment			

Assessment				
	Description	Qualification	Trai	ning and
			Learni	ng Results
Autonomous problem	Resolution of exercises by the students, related to the contents	20	B1	C7
solving	explained in the classroom.		B5	C12
			B6	
			B14	

Autonomous problem solving	Resolution of exercises by the students, related to the contents explained in the classroom.	20	B1 B5 B6 B14	C7 C12
Autonomous problem solving	Resolution of exercises by the students, related to the contents explained in the classroom.	20	B1 B5 B6 B14	C7 C12
Essay questions exam	Test with theoretical questions and exercises to develop in a limited time. This test will provide the final grade for the students who opt for the global evaluation modality.	40	B1	C7 C12

Other comments on the Evaluation

The dates of the exams of the subject can be consulted on the website of the Faculty http://fccee.uvigo.es

On the other hand, the dates of the rest of the continuous evaluation tests will be published in the course platform with sufficient time in advance.

The final grade for the course will be given by the following formula: NF=A+(10-A)E/10 where A is the grade for the continuous assessment (maximum of 6 points) and E is the grade for the final exam (maximum of 10 points). In case of not passing the subject in the first call, the mark obtained for the work throughout the course will be maintained for the second call. The grade of NOT PRESENTED will not be applied to any student who takes any of the final exams.

The same evaluation system will be followed in the case of the end-of-course call.

Sources of information

Basic Bibliography

Balbás, A., Análisis matemático para la economía I. Cálculo diferencial, AC, 1991

Sydsaeter, K. e outros., Matemáticas para el análisis económico, Pearson, 2012

Complementary Bibliography

Balbás, A. e outros, **Análisis matemático para la economía II. Cálculo integral y sistemas dinámicos**, AC, 1991 Besada, M. e outros., **Cálculo diferencial en varias variables: problemas y ejercicios tipo test resueltos**, Alfaomega, 2012

Recommendations

Other comments

This subject in the PCEO Degree in Business Administration and Management-Degree in Law is taught in the first quarter of the first year and the teachers in charge are Carmen Quinteiro Sandomingo and Miguel Mirás Calvo.