



IDENTIFYING DATA

Mathematics: Overview of mathematics

Subject	Mathematics: Overview of mathematics			
Code	P03G370V01203			
Study programme	(*)Grao en Enxeñaría Forestal			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	9	Basic education	1st	2nd
Teaching language	Spanish			
Department	Applied Mathematics I			
Coordinator	Botana Ferreiro, Francisco Ramón			
Lecturers	Botana Ferreiro, Francisco Ramón			
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General description				

Competencies

Code	
C5	Ability to solve mathematical problems that may arise in engineering. Ability to apply knowledge about: differential equations and partial derivatives; numerical methods, numerical algorithm, differential geometry; differential and integral calculation.
D1	Ability to understand the meaning and application of the gender perspective in the different fields of knowledge and in professional practice with the aim of achieving a more just and egalitarian society
D6	Organization and planning capacity

Learning outcomes

Expected results from this subject	Training and Learning Results
*CE-05: Capacity for the resolution of the mathematical problems that can pose in the engineering. C5	D1
Aptitude to apply the knowledges on: differential equations and in partial derivatives, numerical methods, algorithmic numerical, differential geometry, differential calculation and integral.	D6
Know and use songs to promote the education rítmica.	

Contents

Topic	
Differential geometry	Functions of several real variables Curves and surfaces
Infinitesimal calculation	Concept of limit in $\mathbb{R}^n$ Limit and continuity of vectorial functions of several real variables Jacobian Matrix multiple Integration Integrals of line
Differential equations	Resolution of ordinary differential equations Resolution of equations in partial derivatives
Numerical methods	Interpolation approximate Resolution of equations numerical Integration

Planning

	Class hours	Hours outside the classroom	Total hours

Lecturing	30	48	78
Problem solving	10	16	26
Presentation	10	16	26
Laboratory practices	25	50	75
Problem solving	5	5	10
Essay questions exam	5	5	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	(*)Clase estándar usando pizarra e medios informáticos por tódolo/as participantes
Problem solving	(*)Problemas complementarios dos contidos puramente teóricos
Presentation	(*)Voluntarias, en función do nivel e disposición do alumnado
Laboratory practices	(*)Resolución de problemas mediante sistemas de cálculo matemático

Personalized attention

Assessment

	Description	Qualification	Training and Learning Results	
Lecturing	(*)Comprensión específica e global dos contidos	20	C5	D1
Problem solving	(*)Uso de técnicas estándar, ideas orixinais	5	C5	D6
Presentation	(*)Claridade, verbalización, uso de recursos externos	15	C5	D1
Laboratory practices	(*)Destreza, capacidade atopar recursos,	40	C5	D6
Problem solving	(*) Uso de técnicas estándar, ideas orixinais	5	C5	D6
Essay questions exam	(*)Capacidades de expresión e comprensión	15	C5	D1

Other comments on the Evaluation

Sources of information

Basic Bibliography

Complementary Bibliography

Arthur Mattuck, **Differential Equations**,

<http://ocw.mit.edu/OcwWeb/Mathematics/18-03Spring-2006/VideoLectures/index.htm>,

Paul Dawkins, **Differential Equations**, <http://tutorial.math.lamar.edu/classes/de/de.aspx>,

William Stein, **Sage**, <http://sagemath.org>,

Michael Corral, **Vector Calculus**, <http://www.mecmath.net/calc3book.pdf>,

Dale Hoffman, William Stein, David Joyner, **Integral Calculus and Sage**,

<http://sage.math.washington.edu/home/wdj/teaching/calc2-sage/calc2-sage.pdf>,

Recommendations

Subjects that it is recommended to have taken before

Mathematics: Mathematics and IT/P03G370V01103