IDENTIFYING DATA

Mathematics: Calculus 1

Subject	Mathematics: Calculus 1
Code	V12G330V01104
Study programme	Grado en Ingeniería en Electrónica Industrial y Automática

Descriptors	ECTS Credits		Choose	Year	Quadmester
	6		Basic education	1st	1st

Teaching language	Spanish Galician
Department	
Coordinator	Martínez Martínez, Antonio
Lecturers	Busto Ulloa, Saray Díaz de Bustamante, Jaime Estévez Martínez, Emilio Martínez Martínez, Antonio Meniño Cotón, Carlos Prieto Gómez, Cristina Magdalena Rodal Vila, Jaime Alberto Vidal Vázquez, Ricardo
E-mail	antonmar@uvigo.es
Web	http://moovi.uvigo.gal/
General description	(*)O obxectivo desta materia é que o estudante adquira o dominio das técnicas básicas de cálculo diferencial nunha e en varias variables e de cálculo integral nunha variable que son necesarias para outras materias que debe cursar na titulación.

Training and Learning Results

Code	
B3	CG3 Knowledge in basic and technological subjects that will enable students to learn new methods and theories, and provide them the versatility to adapt to new situations.
B4	CG4 Ability to solve problems with initiative, decision making, creativity, critical thinking and the ability to communicate and transmit knowledge and skills in the scope of industrial engineering in the field of Industrial Electronic and Automation.
C1	CE1 Ability to solve mathematical problems that may arise in engineering. Ability to apply knowledge about: linear algebra, geometry, differential geometry, differential and integral calculus, differential equations and partial differential equations, numerical methods, numerical algorithms, statistics and optimization.
D1	CT1 Analysis and synthesis.
D2	CT2 Problems resolution.
D6	CT6 Application of computer science in the field of study.
D9	CT9 Apply knowledge.
D14	CT14 Creativity.
D16	CT16 Critical thinking.

Expected results from this subject

Expected results from this subject	Training and Learning Results		
(*)	B3	C1	D1
(*)	B3	C1	D1
(*)	B3 B4	C1	D2 D9 D14 D16

(*)	B3 B4	C1	D1 D2 D9 D14 D16
(*)	B4	C1	D2 D6 D9 D16

Contents

Topic	
Convergence and continuity	Introduction to real numbers. Absolute value. Euclidean space R^n. Successions. Series. Limits and continuity of functions of one and several variables.
Differential calculus of functions of one and several variables	Differential calculus of real functions of one real variable Differential calculus of functions of several real variables
Integral calculus of functions of one variable	The Riemann integral. Calculus of primitives. Improper integrals. Applications of the integral.

Planning

	Class hours	Hours outside the classroom	Total hours
Problem solving	20.5	30	50.5
Laboratory practical	12.5	5	17.5
Lecturing	32	39	71
Problem and/or exercise solving	3	3	6
Essay questions exam	2	3	5

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

Methodologies

	Description
Problem solving	The professor will resolve problems and exercises type and the student will have to resolve similar exercises.
Laboratory practical	They will employ computer tools to resolve exercises and apply the knowledges obtained in the classes of theory.
Lecturing	The professor will expose in the theoretical classes the contents gives the matter.

Personalized assistance

Methodologies	Description
Problem solving	The professor will attend personally the doubts and queries of the students.
Laboratory practical	The professor will attend personally the doubts and queries of the students.

Assessment

	Description	Qualification	Training and Learning Results		
Problem and/or exercise solving	They will make controls written and/or works. The weight of each one of them will not surpass 30% of the continuous evaluation.	60	B3 B4	C1	D1 D2 D6 D9 D14 D16
Essay questions exam	It will do a final examination on the contents of the whole of the matter.	40	B3 B4	C1	D1 D2 D9

Other comments on the Evaluation

The continuous eval. carry to cape on the previously exposed criteria. Those students that do not receive to the continuous eval be evaluated with a final examination on the contents of the whole of the matter, that will be the 100% of the note.

The continuous eval. of the students in second announcement consist in an examination on the contents of the whole of the matter, that will be 100% of the note.

Commitment:

"It expects that the present student a behaviour ethtic o suitable. In case to detect a behaviour no-ethic o (copy, plagiarism, use of electronical devices unauthorised, and others) consider hat the student doesnt the necessary requirements to surpass the matter. In this case the calification in the present course will be of suspense (0.0)."

Sources of information

Basic Bibliography

Burgos, J., **Cálculo Infinitesimal de una variable**, 2ª, McGraw-Hill, 2007

Burgos, J., **Cálculo Infinitesimal de varias variables**, 2ª, McGraw-Hill, 2008

Galindo Soto, F. y otros, **Guía práctica de Cálculo Infinitesimal en una variable**, 1ª, Thomson, 2003

Galindo Soto, F. y otros, **Guía práctica de Cálculo Infinitesimal en varias variables**, 1ª, Thomson, 2005

Larson, R. y otros, **Cálculo 1**, 9ª, McGraw-Hill, 2010

Larson, R. y otros, **Cálculo 2**, 9ª, McGraw-Hill, 2010

Stewart, J., **Cálculo de una variable. Trascendentes tempranas**, 7ª, Thomson Learning, 2014

Complementary Bibliography

García, A. y otros, **Cálculo I**, 3ª, CLAGSA, 2007

García, A. y otros, **Cálculo II**, 2ª, CLAGSA, 2006

Rogawski, J., **Cálculo. Una variable**, 2ª, Reverte, 2012

Rogawski, J., **Cálculo. Varias variables**, 2ª, Reverte, 2012

Tomeo Perucha, V. y otros, **Cálculo en una variable**, 1ª, Garceta, 2011

Tomeo Perucha, V. y otros, **Cálculo en varias variables**, 1ª, Garceta, 2011

Recommendations

Subjects that continue the syllabus

Mathematics: Calculus 2 and differential equations/V12G330V01204

Subjects that are recommended to be taken simultaneously

Mathematics: Algebra and statistics/V12G330V01103