



IDENTIFYING DATA

Mathematics: Mathematics II

Subject	Mathematics: Mathematics II			
Code	V10G061V01109			
Study programme	(*)Grao en Ciencias do Mar			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	6	Basic education	1st	2nd
Teaching language	Spanish Galician			
Department				
Coordinator	Besada Morais, Manuel			
Lecturers	Besada Morais, Manuel			
E-mail	mbesada@uvigo.gal			
Web	http://faitic.uvigo.es			
General description	Basic course of integrate of line and surface and of equations *diferenciais			

Competencies

Code	
A5	Students have developed those learning skills that are necessary for them to continue to undertake further study with a high degree of autonomy
C1	know at a general level the fundamental principles of sciences: Mathematics, Physics, Chemistry, Biology and Geology.
C2	Acquire basic knowledge of mathematics (differential and integral calculation) and statistics.
D2	Acquire the ability to learn autonomously, continuously and collaboratively, organizing and planning tasks over time.

Learning outcomes

Expected results from this subject	Training and Learning Results		
<input type="checkbox"/> Understand the concepts of *rotacional and divergence of a field *vectorial. Comprise the importance of the integrals of line and surface and know used in the study of the potential energy and other physical questions.	A5	C1 C2	D2
<input type="checkbox"/> Comprise, formulate and resolve any differential equations of first and second order.	A5	C1	D2
<input type="checkbox"/> Use a program *informático in the resolution of problems related with the integral calculation and the differential equations.	A5	C1 C2	D2

Contents

Topic	
Integral of line. Fields *conservativos	Regular curves. Integral along a curve. Work realized by a field. Fields *conservativos. *Rotacional. Divergence
Double integration. Surfaces.	Integration in *rectángulos. Integration in general areas. Change of variable. Polar coordinates. *Teorema Of *Green. Parametric and regular surfaces. Orientation of a surface.
Integral of surface. Integration @triple.	Integral of flow. *Teoremas Of Stokes. Integration @triple. Spherical coordinates and *cilíndricas. *Teorema Of *Gauss.
Differential equations of first order	Solution of a differential equation. Equations in separate variables. Exact equations. Linear equations.
Linear differential equations of upper order	Linear equations of order *n. Solutions. Linear equations with @constante coefficients. General solution of the equation *homoxénea. Particular solution of the complete equation.
*Temario Of laboratory	Resolution of exercises of integration and differential equations by means of programs of calculation.

Planning

	Class hours	Hours outside the classroom	Total hours
Lecturing	26	26	52
Seminars	18	18	36
Practices through ICT	4	2	6
Autonomous problem solving	0	10	10
Collaborative Learning	4	0	4
Problem and/or exercise solving	5	10	15
Essay questions exam	2	10	12
Self-assessment	0	6	6
Problem and/or exercise solving	3	6	9

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

Methodologies

Methodologies	Description
Lecturing	Exhibition of the theoretical bases and resolution of exercises and basic examples.
Seminars	Activities focused to the *trabajo individual or in group of the student in the resolution of problems that allow *afondar or enlarge the contents of the discipline. They Will employ how supplement of the theoretical kinds.
Practices through ICT	Learning of the handle of one plan *informático of calculation and graphic representation.
Autonomous problem solving	Activity in that formulate problems and exercises related with the discipline. The students owes to resolved by means of the methods accommodated to the available information and interpret the results.
Collaborative Learning	Specific activities of work in group.

Personalized assistance

Methodologies	Description
Seminars	The students will sue to the professor the clarifications that estimate oportune to comprise better to subject and develop successfully the tasks proposed. *Faráse Also a trackingof the individual work of the student.
Practices through ICT	The students will sue to the professor the clarifications that estimate oportune to comprise better to subject and develop successfully the tasks proposed. *Faráse Also a trackingof the individual work of the student.
Collaborative Learning	The student that wish it will be able to *acudir the *titorías customized to resolve doubts. To optimise the time, is necessary that the student contact with the in advance sufficient professor by *mail.
Tests	Description
Problem and/or exercise solving	The student that wish it will be able to *acudir the *titorías customized to resolve doubts. To optimise the time, is necessary that the student contact with the in advance sufficient professor by *mail.

Assessment

	Description	Qualification	Training and Learning Results
Practices through ICT	The *estudiantes owe to resolve any exercises with the plan *informático used in the sessions of laboratory.	5	A5 C2 D2
Problem and/or exercise solving	During it study will realize partial proofs with questions type test and/or of short answer.	25	C1 D2 C2
Essay questions exam	When finalizing the course *realizaráse a final proof with questions that will be able to be type test, of short answer and/or problems. It Will be requirement *imprescible surpass in a 30% the qualification of this proof to approve the subject.	45	A5 C1 D2 C2
Problem and/or exercise solving	Exhibition or delivery in the classroom in the that the *estudiantado owes to solve a series of low problems the conditions and the time established pole professor.	25	A5 C1 D2 C2

Other comments on the Evaluation

- The date, time and location of the assessment tests will be published on the official website of the Faculty of Marine Sciences: <http://mar.uvigo.es/index.php/gl/alumnado-actual/examenes-2>
- A partial test may be carried out, which may release material from the final test.

- To pass the subject, the following requirements will be essential:
- - Exceed 30% of the final test grade.
- -Get 50% of the grade in the sum of the grades for all sections.
- Any student who, during the course, participates in evaluation tests of two or more subjects of the program will not be able, in any case, to obtain the grade of NOT PRESENTED.
- Students who do not pass the subject in the ordinary call, and intend to do so in the extraordinary call, will maintain the grades obtained during the course in each of the assessment tests carried out, except for the qualifications of practices with the support of ICT and the two tests taken at the end of the course, which will be evaluated in the corresponding exam. Likewise, the qualification of the resolved exercises delivered during the course may be modified through a work supervised by the teaching staff (in this case, it will be necessary to contact the teaching staff well in advance to specify the work to be done).
- Students are required to take this course responsible and honest behavior.
- Any form of fraud (copying or plagiarism) aimed at falsifying the level of knowledge and skills achieved in all types of evidence, reports or work is considered inadmissible. Fraudulent conduct may mean suspending the subject for a full course. An internal record of these actions will be kept to, in the case of recidivism, request the rector to open a disciplinary file.

Sources of information

Basic Bibliography

Besada, M.; García Cutrín, J.; Mirás Calvo, M.A.; Quinteiro, C.; Vázquez, C., **Un mar de matemáticas**, Servizo de publicacións da Universidade de Vigo, 2016

Besada, M.; García Cutrín, J.; Mirás, M.; Quinteiro, C.; Vázquez, C., **Matlab: todo un mundo**, Servizo de publicacións da Universidade de Vigo, 2007

Larson, R.; Edwars, B., **Cálculo. Vol 1 e 2.**, 9ª, McGraw-Hill, 2010

Adams, R., **Cálculo**, 6ª, Pearson, 2009

Complementary Bibliography

Besada, M.; García Cutrín, J.; Mirás Calvo, M.A.; Quinteiro, C.; Vázquez, C., **Matemáticas á Boloñesa**, Servizo de publicacións da Universidade de Vigo, 2014

Thomas, George B. Jr., **Cálculo, varias variables**, 12ª, Pearson, 2010

Campbel, S.; Haberman, R., **Introducción a las ecuaciones diferenciales**, McGraw-Hill, 1998

Bradley, G.; Smith, K., **Cálculo de varias variables (Volume 2)**, Prentice Hall, 1998

Recommendations

Subjects that it is recommended to have taken before

Mathematics: Mathematics I/V10G061V01104

Other comments

It recommends to had studied the subject of Mathematical II of the second course of *bacharelato.

Contingency plan

Description

=== EXCEPTIONAL MEASURES SCHEDULED ===

In front of it uncertain and unpredictable evolution of the sanitary alert caused by the COVID- 19, the University establishes join extraordinary planning that will actuate in the moment in that the administrations and the @propio institution determine it attending to criteria of security, health and responsibility, and guaranteeing the *docencia in a @escenario no *presencial or no totally *presencial. These already scheduled measures guarantee, in the moment that was prescriptive, the development of the *docencia of a way but *áxil and effective when being known beforehand (or with a wide advance) pole students and the teaching staff through the tool normalized and institutionalized of the teaching guides DOCNE*T.

=== ADAPTATION OF The METHODOLOGIES ===

* teaching Methodologies that keep : Any

* teaching Methodologies that modify : The theoretical kinds the Seminars *realizaránse in the Virtual dispatch of the professor. The Practices with support of the TIC disappear.

* Mechanism no *presencial of attention to the students (*titorías): virtual Dispatch of the professor, previous petition by *mail to mbesada@uvigo.gal

- * Modifications (proceed) of the contained to impart: No they modify
- * additional Bibliography to facilitate to car-learning: Without variation
- * Other modifications

=== ADAPTATION OF The EVALUATION ===

* Proofs already realized

Seminars : [previous Weight 25%] [Weight Proposed 30%]

* pending Proofs that keep : All

* Proofs that modify [Practical with support of the TIC] => [disappear]

* New proofs: None
