UNIVERSIDADE DA CORUÑA

Teaching Guide					
Identifying Data					2014/15
Subject (*)	Estatística			Code	610G02005
Study programme	Grao en Bioloxía				
Descriptors					
Cycle	Period	Year		Type	Credits
Graduate	2nd four-month period	First		FB	6
Language	Spanish				
Prerequisites					
Department	Matemáticas				
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Web					
General description	Esta materia proporciona un primeiro contacto do alumnado coas técnicas estatísticas: modelización estatística, ferramentas estatísticas para o análise de datos, procedementos de crítica e diagnose dos resultados e interpretación dos resultados en termos do problema prantexado.				

Study programme competences	
Code	Study programme competences
A21	Deseñar modelos de procesos biolóxicos.
A26	Deseñar experimentos, obter información e interpretar os resultados.
A30	Manexar adecuadamente instrumentación científica.
B2	Resolver problemas de forma efectiva.
B3	Aplicar un pensamento crítico, lóxico e creativo.
B6	Organizar e planificar o traballo.
B10	Exercer a crítica científica.
C3	Utilizar as ferramentas básicas das tecnoloxías da información e as comunicacións (TIC) necesarias para o exercicio da súa profesión e para a aprendizaxe ao longo da súa vida.
C6	Valorar criticamente o coñecemento, a tecnoloxía e a información dispoñible para resolver os problemas cos que deben enfrontarse.

Learning outcomes			
Subject competencies (Learning outcomes)	Study programme competences		
To design experiments, to get information and to explain the results	A21 A26 A30	B2 B3 B10	C3 C6
To have a questioning, logical and creative thinking to solve problems effectively.		B2 B3 B6	C3 C6

Contents	
Topic	Sub-topic
Probability Theory	Basic concepts on probability theory Random variables Basic probability distributions in Biology
Descriptive Statistics	Describing univariate data Describing bivariate data

Statistical Inference	Introduction Point estimation Interval estimation Parametric hypothesis testing Nonparametric hypothesis testing Analysis of variance and nonparametric alternatives

Planning			
Methodologies / tests	Ordinary class hours	Student?s personal work hours	Total hours
Short answer questions	2	0	2
ICT practicals	13	26	39
Problem solving	8	19.2	27.2
Guest lecture / keynote speech	24	52.8	76.8
Objective test	3	0	3
Personalized attention	2	0	2
(*)The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.			

Methodologies	
Methodologies	Description
Short answer questions	Short answer and/or test questions with the aim of controlling the progress in the PROBABILITY contents block.
ICT practicals	Practicals in the computer lab to introduce a statistical software helpful to solve problems.
Problem solving	Seminars in small groups for the explanation and discussion of problems from the different contents blocks.
Guest lecture / keynote speech	Face to face keynote speeches, where the lecturer will show the fundamental keys of the theoretical program, illustrated suitably with practical examples.
Objective test	Final exam, with short answer questions and/or reasoned solution of practical problems, of the DESCRIPTIVE STATISTICS and STATISTICAL INFERENCE theoretical and practical contents.

Personalized attention	
Methodologies	Description
ICT practicals	Optionally, some academic work consisting of the solution of a practical problem using the statistical software introduced in the ICT practicals, could be requested.

Assessment		
Methodologies	Description	Qualification
Short answer questions	Achievement test to assess the knowledge in the PROBABILITY THEORY block, along with the A21, B2, B3, B6 and C3 study programme competences	40
Objective test	Achievement test to assess the knowledge in the DESCRIPTIVE STATISTICS and STATISTICAL INFERENCE block, along with the A26, A30, B2, B3, B10, C3 and C6 study programme competences	60

Assessment comments

The subject is split into two blocks: 1- Probability Theory and 2-Descriptive Statistics-Statistical Inference. Each block will be assessed independently, so that passing one block will not affect the grade or mark of the other block. To pass the whole subject, it will be strictly necessary to pass each block separately. During the course, two exemption exams will be performed, each for any of the two blocks, so that the student who passes any of the exemption exams, will have the corresponding block passed regarding the may/july final exams. The PROBABILITY THEORY block represents the 40% qualification, and the DESCRIPTIVE STATISTICS and STATISTICAL INFERENCE block the remaining 60%. To get the grade/mark NO SHOW in may, the student should not have attended any exemption exams. To get the grade/mark NO SHOW in july, the student will not be able to attend the final exam in july. The attendance and participation of the seminars, practicals, personalized attention, etc. is not compulsory but additionally could be valued with a maximum of one point over the final mark.

Sources of information	
Basic	
Complementary	

Recommendations
Subjects that it is recommended to have taken before
Análise de datos en Bioloxía/610G02044
Subjects that are recommended to be taken simultaneously
Subjects that continue the syllabus
Other comments
Highly recommended:1- Attendance and participation in the keynote speeches, practicals and seminars.2- To solve every explained exercise, both with and without the statistical software.3- To supplement the course material with the sources of information.4- To study the course material and to solve the proposed problems frequently.5- Active involvement in the practicals and seminars.6- To get familiar with the statistical software using it constantly and regularly. 7- To try to use the statistical techniques in other different subjects.8- Usage and exploitation of the personalized attention sessions.

(*)The teaching guide is the document in which the URV publishes the information about all its courses. It is a public document and cannot be modified. Only in exceptional cases can it be revised by the competent agent or duly revised so that it is in line with current legislation.