UNIVERSIDADE DA CORUÑA

Teaching Guide				
Identifying Data				2022/23
Subject (*)	Ecology I: Individuals and Ecosystems		Code	610G02039
Study programme	Grao en Bioloxía			
Descriptors				
Cycle	Period	Year	Type	Credits
Graduate	1st four-month period	Third	Obligatory	6
Language	SpanishEnglish			
Teaching method	Face-to-face			
Prerequisites				
Department	Bioloxía			
Coordinador	Martínez Abraín, Alejandro	E-mail	a.abrain@udc.es	
Lecturers	Martínez Abraín, Alejandro Piñeiro Corbeira, Cristina Ruiz De la Rosa, Jose Miguel	E-mail	a.abrain@udc.es c.pcorbeira@udc.es jose.miguel.ruiz.delarosa@udc.es	
Web				
General description	Distribution patterns : the individual and the environment. The ecosystem.			

Study programme competences / results	
Code	Study programme competences / results
A1	Recoñecer distintos niveis de organización nos sistemas vivos.
A17	Realizar bioensaios e diagnósticos biolóxicos.
A20	Muestrear, caracterizar e manexar poboacións e comunidades.
A21	Deseñar modelos de procesos biolóxicos.
A24	Xestionar, conservar e restaurar poboacións e ecosistemas.
A26	Deseñar experimentos, obter información e interpretar os resultados.
A30	Manexar adecuadamente instrumentación científica.
B4	Traballar de forma autónoma con iniciativa.
B6	Organizar e planificar o traballo.
B7	Comunicarse de maneira efectiva nunha contorna de traballo.
B8	Sintetizar a información.
B12	Adaptarse a novas situacións.

Learning outcomes			
Learning outcomes	Study programme competences / results		
To describe ecological concepts at the individual, population, community and ecosystem level.	A1 A24		
To discuss ecological concepts by critically considering the evidence in support of them.		B8	
To face with some success the specialised literature.	A30		
To use some basic techniques from the vast ecological methodology.	A17 A20 A21 A26 A30	B4 B6 B7 B12	

Contents	
Topic	Sub-topic
Section 1. Ecology and evolution (2h)	Unit 1. Ecology and evolution

Section 2. The individual and the environment (9h)	Unit 2: Generalities Unit 3. Responses and adaptations to the abiotic environment: temperature, water and light. Unit 4. Other responses to environmental variations.
Section 3. The ecosystem (13h)	Unit 5. The ecosystem and its functioning. Unit 6. Production. Unit 7. Flow of energy Unit 8. Cycles of matter. Unit 9. Decomposition and nutrients regeneration. Unit 10. Global cycles.

Planning				
Methodologies / tests	Competencies / Results	Teaching hours (in-person & virtual)	Student?s personal work hours	Total hours
Guest lecture / keynote speech	A1 A17 A20 A21 A24 A26 A30 B4 B6 B7 B8 B12	28	56	84
Laboratory practice	A1 A17 A20 A21 A24 A26 A30 B4 B6 B7 B8 B12	15	15	30
Seminar	A1 A17 A20 A21 A24 A26 A30 B4 B6 B7 B8 B12	8	8	16
Long answer / essay questions	A1 A17 A20 A21 A24 A26 A30 B4 B6 B7 B8 B12	0	1	1
Case study	A1 A17 A20 A21 A24 A26 A30	0	14	14
Objective test	A1 A17 A20 A21 A24 A26 A30 B4 B6 B7 B8 B12	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
Guest lecture / keynote speech	Oral presentations to transfer knowledge and facilitate learning. Most of the graphical support of presentations is available in the virtual campus (Moodle).
Laboratory practice	For the students to learn effectively through the completion of practical activities in the field and/or in the laboratory.
Seminar	Demonstration and study of numerical models for a better understanding and resolution of ecological problems. Most models will be executed with UDC PCs if students do not have their own laptops.
Long answer / essay questions	Partial examination of the subject (mid-term). One or two mid-terms will take place during the course. They will be eliminatory and alltogether they will account for 30% of the final mark. Mid-term exams will be written in-person and they will have the structure decided by the professor in charge of that teaching. Usually 6 questions to be developed in written. Multiple-choice exams could be scheduled in special occasions, in which attendance in-person is not possible (e.g. COVID pandemia).
Case study	Reports of the activities carried out in Seminars and Labs.
Objective test	Written exam on all sections of the course: theory, labs and seminars.

Personalized attention

Methodologies	Description
Objective test Laboratory practice Seminar Long answer / essay questions Case study	Preparation, explanation and revision of exams. Elucidation of possible doubts emerging as the subjects are implemented. Orientation and tuition to make the most of practicums. Orientation and tuition to make the most of seminars.

Assessment			
Methodologies	Competencies / Results	Description	**Qualification**
Objective test	A1 A17 A20 A21 A24 A26 A30 B4 B6 B7 B8 B12	Final written exam of the contents of the ENTIRE subject: theory (only material not covered in the mid-term examination), labs and seminars (see observations). 50%	50
Long answer / essay questions	A1 A17 A20 A21 A24 A26 A30 B4 B6 B7 B8 B12	Partial exam/s or mid-terms of the subject developed throughout the course (see observations) 30%. Subjects covered by the mid-term exam are eliminatory, and hence will not be asked in the final exam.	30
Case study	A1 A17 A20 A21 A24 A26 A30	Reports of the activities developed in Seminars and Labs (see observations). 20%	20
Others			

Assessment comments

The final grade will result from the student performance in all the activities under evaluation, which will include the three parts of the subject: Theory,Seminars and Labs, with a contribution to the final grade proportional to its contribution in time planning:
60% Theory
20% Seminars
20% Labs
All students will have two opportunities to pass the course.
In the first opportunity, a continuous evaluation will be carried out,including assignments, mid-term tests and a final exam (on a date set by the Faculty Board), with the following relative weighting:
60% Theory (30% mid-term tests + 30% final exam)
20% Seminars (10% assignments + 10% final exam)
20% Labs (10% assignments + 10% final exam)
In the second opportunity, there will be only a single final exam
(on a date set by the Faculty Board) that will include questions on the three
parts of the subject with the following relative weighting:

60% Theory

20% Seminars

20% Labs

Both in the first and in the second opportunities it will be necessary
to pass each and every one of the three parts simultaneously (Theory, Seminars
and Labs) to pass the subject. A failed part may be offset with others if its
grade is at least 4/10. The average grade to pass the course must be a 5.0 out
of 10.
Those students who submit and/or attend to any of the continuous evaluation
activities will be considered as presented (attended), receiving the
corresponding grade for the work submitted and/or tests carried out according
to their weighting, and a grade of zero in those works and/or tests in which
they have not presented anything or not attended to. In the event of not submitting any assignments and not taking any of the tests, the student will be considered as ?not
presented? (NP).
Attendance to Seminars and Labs is not mandatory, but will be recorded.
The assignments to be handed in (linked
to Seminars and Labs) will consist on exercises of the activities carried out in
Seminars and Labs. Those reports will be prepared and handed in following the
indications given by the professor in charge of the subject (number, format, content,
deadlines, etc.) and their qualification will be subject to individual oral
examination, if necessary. These exercises must collect the work and
interpretation of each student.
The achievement of the Honours
mark (maximum qualification) will require, at least, a final grade of 9.0 or

higher, and the execution of all the assignments of the course.
For students who can use the
early December opportunity, the evaluation will consist of a final global exam
with a value of 100%, similar to that described for the second opportunity.

Students with officially recognized academic exemption are able to
participate in the proposed or equivalent activities and will have support by
tutoring (onsite or online).
Subjects covered by the mid-term exam are eliminatory, and hence will not be asked in the final exam. Second-opportunity final exams will cover all material covered during the whole course.
The fraudulent execution of the exam or activities (once verified) will directly imply the failing of the subject and a grade of '0' in the corresponding call (first and second opportunities).

Sources of information	
Basic	- Alstad DN (2001). Basic Populus models of ecology. New Jersey: Prentice-Hall - Alstad DN (). www.cbs.umn.edu/populus. - Begon M, Harper JL & Townsend CR (1999). Ecología: individuos, poblaciones y comunidades. Barcelona: Omega - Piñol J & Martínez-Vilalta J (2006). Ecología con números. Barcelona: Lynx - Piñol J & Martínez-Vilalta J (). www.ecologiaconnumeros.uab.es. - Ricklefs RE (1998). Invitación a la ecología: la economía de la naturaleza. Madrid: Panamericana - Rodríguez J (2010). Ecología. Pirámide - Smith TM & Smith RL (2007). Ecología. Madrid: Pearson Unha das referencias básicas para os seminarios é a de Piñol & Martínez-Vilalta (EC-650). Os modelos que inclúe o libro están dispoñibles na web (https://ddd.uab.cat/record/225887/. Do enlace de Alstad pódese descargar libremente o programa "Populus", con modelos de bioloxía xeral e para algúns seminarios en particular. Inclúe PopulusHelp.pdf (parcialmente en castelán) que foi editado como libro en 2001 (EC-505). Pode haber edicións mais recentes das demais referencias básicas. A descarga de Populus pode resultar problemática para os usuarios de Mac e Windows 10 e 11 polo que se recomenda facelo contempo para atopar solucións.
Complementary	- Gotelli NJ (1995). A primer of ecology. Sinauer - Krebs CJ (1986). Ecología: el análisis experimental de la distribución y la abundancia. Pirámide - Margalef R (1974). Ecología. Barcelona: Omega - Molles M (2006). Ecología: Conceptos y Aplicaciones. McGraw Hill - Odum EP, Barret GW (2006). Fundamentos de ecología. Mexico: Thomson Pode haber edicións mais recentes destas referencias complementarias.

Recommendations
Subjects that it is recommended to have taken before
Chemistry/610G02001 Mathematics/610G02003 Statistics/610G02005
Subjects that are recommended to be taken simultaneously
Applied Plant Physiology /610G02029 Animal Physiology I/610G02035
Subjects that continue the syllabus
Ecology II: Populations and Communities/610G02040 Human Ecology/610G02041 Ecotoxicology/610G02042 Data Analysis in Biology/610G02044
Other comments
Understanding rather than memorization is favored.

(*)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.