Teaching Guide				
Identifying Data				2023/24
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	Rodríguez Roiloa, Sergio	E-mail	sergio.roiloa@udc.es	
Lecturers	Rodríguez Roiloa, Sergio Ruiz De la Rosa, Jose Miguel	E-mail	sergio.roiloa@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	Unit 1. Introduction Unit 2. Evolution

Section 2. The individual and the environment	Unit 3: Generalities Unit 4. Responses to environmental variations. Unit 5. Responses & adaptations to: temperature, water, and light.
Section 3. The ecosystem	Unit 6. The ecosystem and its functioning. Unit 7. Production. Unit 8. Flow of energy Unit 9. Cycles and decomposition of matter. 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
Seminar	A1 A17 A20 A21 A24 A26 A30 B4 B6 B7 B8 B12	8	8	16
Laboratory practice	A1 A17 A20 A21 A24 A26 A30 B4 B6 B7 B8 B12	15	15	30
Objective test	A1 A17 A20 A21 A24 A26 A30 B4 B6 B7 B8 B12	1	0	1
Student portfolio	A1 A17 A20 A21 A24 A26 A30 B4 B6 B7 B8 B12	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).
Seminar	Presentation 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.
Laboratory practice	For the students to learn effectively through the completion of practical activities in the field and/or in the laboratory.
Objective test	Partial exam (mid-term) on the theory taught.
Student portfolio	Reports of the activities developed in seminars and practices.
Objective test	Final exam: theory, seminars and practices

Personalized attention	
Methodologies	Description

Guest lecture / keynote speech Laboratory practice Seminar Student portfolio	Explanation of doubts emerging as the subject develops. Orientation and tuition to make the most of seminars. Orientation and tuition to make the most of practices. Help with preparing reports

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 subject: theory, seminars and practices (see observations).	50
Objective test	A1 A17 A20 A21 A24 A26 A30 B4 B6 B7 B8 B12	Partial exam (mid-term) on the theory taught (see observations).	30
Student portfolio	A1 A17 A20 A21 A24 A26 A30 B4 B6 B7 B8 B12	Reports of the activities developed in seminars and practices (see observations).	20
Others			

Assessment comments

The final qualification will result from all evaluation activities and will include the three parts of the subject: Theory, Seminars and Practices; the contribution to the final grade will be 60%, 20%, and 20%, respectively. All students will have two opportunities to pass the course:
For the first opportunity, the student may choose one of the following evaluation modalities:
1. Continuous evaluation, including: partial exam, reports, and final exam (on a date set by the Faculty Board), with the following weighting:
? 60% Theory (30%partial exam + 30% final exam).
? 20% Seminars (10% deliverables + 10% final exam).
? 20% Practices (10% deliverables + 10% final exam).
Students delivering and/or taking the partial exam will be considered as opting for the continuous assessment. They will receive the grade for the exams taken and/or reports according to their weighting, and a grade of zero in those activities not attended.
2. Single evaluation: it will consist of a sole final exam with the following weighting: 60% Theory, 20% Seminars, and 20% Practices.
Students opting for this single assessment in the first opportunity cannot obtain points from any of the continuous evaluation activities (nor reports neither partial exam).

As for the second opportunity, and regardless of the evaluation system previously chosen, there will be a single final exam; it will include questions on the three parts of the subject with the usual weighting: 60% Theory, 20% Seminars, and 20% Practices.

In order to pass the subject in whatever opportunity it is necessary to simultaneously pass each and every one of the three parts (Theory, Seminars and Practices); a failed part may be compensated with others if its qualification is at least 4/10. The average mark to pass the course is 5.0.
Attendance to Seminars and Practices is recommended but not mandatory, and will be recorded. Attendance does not imply opting for the continuous assessment mode, students may attend and opt for any of the assessment modalities.
Obtaining Honors will require a minimum final grade of 9.0 and the completion of all the tasks proposed for the continuous assessment.
Fraudulent performance of tests or evaluation activities will directly imply a fail grade of '0' in the course (both opportunities).
Students willing to benefit from the December call will be evaluated as for the second opportunity above.
Students with officially recognized academic exemption may carry out the proposed or equivalent
activities online while receiving support by tutorials (face-to-face or online).

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 (). https://ddd.uab.cat/record/225887. - 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 You can freely download the program ?Populus? from Alstad?s link; it contains models on general biology and others for some of our seminars. Populus has been tested on macOS, Linux, Windows 7, Windows 8, Windows 8.1, and Windows 10 (see details in /download). The program includes a PopulusHelp.pdf file (mostly in English) that was edited as a book in 2001 (EC-505).The book by Piñol & Martínez-Vilalta (EC-650) can also be freely downloaded from the above link; it is a good Ecology book, it is worth having a look at it. In addition, it is another basic reference for seminars; in some of them we will be using the executable models (applets) which can be found in /Aplicaciones.Important: you must have ?Java? installed on your computer before you can run either Populus or applets. For most of all these basic references, there may be editions that are more recent and/or in English.

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 There are more recent editions of these complementary references, and also English versions.There are more recent editions of these complementary references, and also English versions.

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.