UNIVERSIDADE DA CORUÑA

Teaching Guide				
Identifying Data				2022/23
Subject (*)	Ecology II: Populations and Communities		Code	610G02040
Study programme	Grao en Bioloxía			
Descriptors				
Cycle	Period	Year	Type	Credits
Graduate	2nd four-month period	Third	Obligatory	6
Language	Spanish			
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	Population ecology. Species interactions. Communities			

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		
Describe ecological concepts at individual, population, community and ecosystem level.	A1 A24		
Analytical discussion of ecological concepts.		B8	
Managing scientific literature.	A30		
Using basic techniques in ecology.	A17 A20 A21 A26 A30	B4 B6 B7 B12	

Contents	
Topic	Sub-topic

Section 1. Populations	Unit 1. Size, structure and life cycles. Unit 2. Population growth models. Unit 3. Growth in natural populations. Unit 4. Metapopulations.
Section 2. Species interactions	Unit 5. Competition. Unit 6. Predation. Unit 7. Mutualism.
Section 3. Communities	Unit 8. Community structure. Unit 9. Patterns in species richness. Unit 10. Ecological succession, trophic structure and stability.

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
Multiple-choice questions	A1 A17 A20 A21 A24 A26 A30	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 ease 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 worked with Faculty PCs if students have no portables.
Multiple-choice questions	Partial examination of the subject (mid-term) will take place during the course. They will not be eliminatory
Case study	Deliverable elements of the activities carried out in Seminars and Practicals
Objective test	Written exam on all aspects of the matter: theory, practicals and seminars.

Personalized attention	
Methodologies	Description

Case study Laboratory practice	Elucidation of possible doubts emerging as the matter is developed.
Seminar	Orientation and tuition to make the most of practicals.
Guest lecture / keynote speech	Orientation and tuition to make the most of seminars.
Objective test Multiple-choice questions	Preparation, explanation and revision of deliverables and exams.

Assessment			
Methodologies	Competencies / Results	Description	**Qualification**
Case study	A1 A17 A20 A21 A24 A26 A30	Exercises linked to the activities carried out in Seminars and Labs (see evaluation comments)	20
Objective test	A1 A17 A20 A21 A24 A26 A30 B4 B6 B7 B8 B12	Written exam on all aspects of the subject: Theory, Seminars and Labs (see evaluation comments)	50
Multiple-choice questions	A1 A17 A20 A21 A24 A26 A30	Partial examination of the subject (mid-term tests) will take place during the course. They will not be eliminatory (see evaluation comments)	30
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 and 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 case of the second opportunity, there will be 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 weighting:
60% Theory
20% Seminars
20% Practicals
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 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 or not attended. In case of not submitting assignments or not taking any of the tests, they will be considered as not presented.
Attendance to Seminars and Labs is not mandatory.
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 (format, content, deadlines, etc.) and their qualification will be subject to individual oral examination, if necessary. These exercises must collect the individual 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.
The fraudulent execution of the exam or activities will directly imply the grade of '0' in the subject in the corresponding opportunity.
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 have support by tutoring (onsite 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 - Begon M, Howarth RW, Townsend CR (2014). Essentials of Ecology. USA: Wiley - Krebs CJ (1986). Ecología: el análisis experimental de la distribución y la abundancia. Madrid: Pirámide - Molles M (2006). Ecología: Conceptos y Aplicaciones. Madrid: McGraw - Hill - 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 - Smith RL, Smith TM (2000). Ecología. Madrid: Pearson - Smith TM, Smith RL (2012). Elements of Ecology. USA: Pearson - Molles M (2013). Ecology: concepts and applications. McGraw Hill One of the basic references for seminars is Piñol and Martínez-Vilalta (EC-650). The models in the CD included in this book are also available in its web page.From Alstad?s link the program ?Populus? can be freely downloaded, containing models on general biology and also others for some particular seminars. It includes a PopulusHelp.PDF that was edited as a book in 2001 (EC-505).

Complementary	- Gotelli NJ (1995). A primer of ecology. Sunderland: Sinauer - Margalef R (1974). Ecología. Barcelona: Omega - Odum EP, Barret GW (2006). Fundamentos de ecología. Mexico: Thomson

Recommendations
Subjects that it is recommended to have taken before
Chemistry/610G02001 Mathematics/610G02003 Statistics/610G02005 Physical Geography/610G02006 Ecology I: Individuals and Ecosystems/610G02039
Subjects that are recommended to be taken simultaneously
Population Genetics and Evolution/610G02021 Animal Physiology II/610G02036
Subjects that continue the syllabus
Human Ecology/610G02041 Ecotoxicology/610G02042 Data Analysis in Biology/610G02044
Other comments
Understanding rather than memorization is favored