



Teaching Guide

Identifying Data				
			2023/24	
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	Martínez Abraín, Alejandro	E-mail	a.abrain@udc.es	
Lecturers	Martínez Abraín, Alejandro Piñeiro Corbeira, Cristina	E-mail	a.abrain@udc.es c.pcorbeira@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	B4	
	A20	B6	
	A21	B7	
	A26	B12	
	A30		

Contents

Topic	Sub-topic
Section 1. Introduction to populations	Unit 1. Introduction to population ecology Unit 2. Life history traits and life history strategies



Section 2. Modelling the growth of populations	Unit 3. Modelling the exponential growth of populations Unit 4. Modelling the logistic growth of populations Unit 5. Modelling populations with age structure Unit 6. Modelling interspecific competition and predation. Unit 7. Modelling open populations or metapopulations
Section 3. Communities	Unit 8. Community structure. Unit 9. Island biogeography. Unit 10. Succession and perturbation.

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
Short answer 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 (former 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. Models will be run with UDC PCs or with portable computers own by the students.
Short answer questions	Partial examination of the subject (mid-term exam or mid-term exams) will take place during the course. They will not be eliminatory
Case study	Deliverable elements of the activities carried out in Seminars and Labs.
Objective test	Written exam on all aspects of the matter: theory, labs and seminars.

Personalized attention	
Methodologies	Description



Case study	Elucidation of possible doubts emerging as the matter is developed.	
Laboratory practice		
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		Preparation, explanation and revision of deliverables and exams.
Short answer questions		

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
Short answer questions	A1 A17 A20 A21 A24 A26 A30	Partial examination of the subject (mid-term test or tests) will take place during the course. It (or they) will not be eliminatory.	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 but it is advisable.

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.

Fraudulent performance of tests or evaluation activities, once verified, will directly imply the qualification of failing in the call in which it is committed: the student will be graded with "fail" (numerical grade 0) in the corresponding call for the course academic, whether the commission of the offense occurs on the first opportunity or on the second. For this, their qualification will be modified in the first opportunity certificate, if necessary.

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).



<p>Basic</p>	<ul style="list-style-type: none"> - 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 <p>Unha das referencias básicas para os Seminarios é Piñol e Martínez-Vilalta (EC-650). Os modelos contidos no CD que inclúe o libro están tamén dispoñibles na súa web.Do enlace de Alstad pódese descargar libremente o programa Populus, con modelos de bioloxía xeral e para algúns seminarios en particular. Inclúe un PopulusHelp.PDF que foi editado como libro en 2001 (EC-505).</p>
<p>Complementary</p>	<ul style="list-style-type: none"> - 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	
<p>Chemistry/610G02001</p> <p>Mathematics/610G02003</p> <p>Statistics/610G02005</p> <p>Physical Geography/610G02006</p> <p>Ecology I: Individuals and Ecosystems/610G02039</p>	
Subjects that are recommended to be taken simultaneously	
<p>Population Genetics and Evolution/610G02021</p> <p>Animal Physiology II/610G02036</p>	
Subjects that continue the syllabus	
<p>Human Ecology/610G02041</p> <p>Ecotoxicology/610G02042</p> <p>Data Analysis in Biology/610G02044</p>	
Other comments	
<p>Understanding rather than memorization is favored. As stated in the different applicable regulations for university teaching, the gender perspective must be incorporated in this matter (non-sexist language will be used, a bibliography of authors of both sexes will be used, the intervention in class of students will be encouraged and students...). Work will be done to identify and modify prejudices and sexist attitudes and the environment will be influenced to modify them and promote values of respect and equality. Situations of discrimination based on gender must be detected and actions and measures to correct them will be proposed. To help achieve a sustainable immediate environment and comply with point 6 of the "Environmental Declaration of the Faculty of Sciences (2020)", the documentary work carried out in this matter: the &nbsp;a. They will be requested mostly in virtual format and computer support. b. If done on paper: - Plastics will not be used. - Double-sided prints will be made. - Recycled paper will be used. - Drafts will be avoided.</p>	

(*)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.