



Teaching Guide

Identifying Data					2017/18
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	Obligatoria	6	
Language	Spanish				
Teaching method	Face-to-face				
Prerequisites					
Department	Bioloxía				
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Lecturers	Martínez Abraín, Alejandro	E-mail	a.abrain@udc.es		
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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. 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	24	62.4	86.4
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	20.8	28.8
Objective test	A1 A17 A20 A21 A24 A26 A30 B4 B6 B7 B8 B12	3	0	3
Personalized attention		1.8	0	1.8

(*)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.
Objective test	Written exam on all aspects of the matter: theory, practicals and seminars.

Personalized attention	
Methodologies	Description
Laboratory practice Seminar	Elucidation of possible doubts emerging as the matter is developed.
Guest lecture / keynote speech	Orientation and tuition to make the most of practicals.
Objective test	Orientation and tuition to make the most of seminars. Preparation, explanation and revision of exams.



Assessment

Methodologies	Competencies / Results	Description	Qualification
Objective test	A1 A17 A20 A21 A24 A26 A30 B4 B6 B7 B8 B12	Written exam on all aspects of the matter: theory, practicals and seminars (see Assessment comments). By means of this global exam all the degree's specific competencies included in this matter will be evaluated (A1, A17, A20, A21, A24, A26, A27, A29, A30, A31, A32).	100
Others			

Assessment comments

Written exam on all aspects of the matter: theory, practicals and seminars (see Assessment comments).
By means of this global exam all the degree's specific competencies included in this matter will be evaluated.

Objective test. Written exam on all aspects of the matter: theory, practicals and seminars (see Assessment comments).

One and only exam (but 2 opportunities) on all and every part: theory, practicals (P) and seminars (S). Weight proportional to contribution to time planning: 60%, 20% y 20% (respectively). All 3 parts are to be passed simultaneously, but compensation possible if one part > 4/10.

Attendance not compulsory, but for P and S it'll be recorded. Students can voluntarily present at the exam a paper personal copybook on the work developed in all 8 S and/or all 3 P classes; main text must be manuscript (by hand) and the whole should be easily readable. Guides will be available in Moodle and the marks on these workbooks may help overcome insufficiencies in the corresponding exam. Copybooks can be drafted in pairs or groups, but the final result is not to be cloned: they must reflect individual work and interpretation. Both copybooks are needed to get the top mark (Honours).

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

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). Hai edicións mas recentes das demais referencias básicas.



Complementary	<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 <p>Hai edicions mais recentes destas referencias complementarias Hai edicions mais recentes destas referencias complementarias</p>
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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

(*)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.