



Teaching Guide

Teaching Guide				
Identifying Data				2019/20
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	Ruiz De la Rosa, Jose Miguel	E-mail	jose.miguel.ruiz.delarosa@udc.es	
Lecturers	Martínez Abraín, Alejandro	E-mail	a.abrain@udc.es	
	Ruiz De la Rosa, Jose Miguel		jose.miguel.ruiz.delarosa@udc.es	
Web				
General description	Distribution patterns : the individual and the environment. The ecosystem.			

Study programme competences

Code	Study programme competences
A1	Recoñecer distintos niveis de organización nos sistemas vivos.
A17	Realizar bioensaios e diagnósticos biolóxicos.
A20	Muestrear, caracterizar e manexar poboacións e comunidades.
A21	Diseñar modelos de procesos biolóxicos.
A24	Xestionar, conservar e restaurar poboacións e ecosistemas.
A26	Diseñar 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		
To describe ecological concepts at the individual, population, community and ecosystem level.	A1 A24		
To discuss ecological concepts by critically considering the evidences in support.		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. Ecology and evolution



Section 2. Individuals and the environment	Unit 2. Generalities Unit 3. Responses to temperature, water and light Unit 4. Responses to other environmental variations
Section 3. The ecosystem	Unit 5. The ecosystem and its functioning Unit 6. Primary production Unit 7. Energy flow Unit 8. Matter cycles Unit 9. Decomposition Unit 10. Global biogeochemical cycles

Planning				
Methodologies / tests	Competencies	Ordinary class hours	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
Objective test	Preparation, explanation and revision of exams. Elucidation of possible doubts emerging as the matter is developed.
Guest lecture / keynote speech	Orientation and tuition to make the most of practicals.
Laboratory practice	
Seminar	Orientation and tuition to make the most of seminars.

Assessment			
Methodologies	Competencies	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).	100
Others			

Assessment comments

The final qualification will be obtained from only one exam including questions on the three components of the subject (theory, seminars and practicum). The weight of each section on the final mark will be proportional to its time contribution to the subject (60%, 20%, 20% respectively). In order to pass the subject it is necessary to pass simultaneously each and every component. A failed mark in one of the three components will be considered as ?compensable mark? (i.e. an overall mean will be calculated) if it is at least 4 over 10.

Attendance to both seminars and practicum is not compulsory but it will be recorded. Students have the option to hand a notebook summarizing the work developed during seminars and practicum. Deadline for notebooks will be the day of the first call for the final exam. Notebooks should be handwritten, except for tables and graphs, with and easy-to-read calligraphy. They will be prepared following the directions specified in the Moodle platform. Its qualification can contribute to offset possible shortcomings in the corresponding part of the exam.

It is advisable to keep a copy of the notebook as the original copy will be retained by the professors until the end of the following academic year. However, students will be able to get their notebooks back in order to improve them and study for the second final exam call in July. In case of introducing some changes in the notebooks during this period these should be clearly highlighted.

Notebooks can be prepared in pairs or groups but they must be original work. Notebooks are individual work. Notebooks handed in during the first exam call can help improve the final mark. Those handed in during the second exam call will not help improve the final qualification, but they can help to get a ?compensable mark? in case seminar or practicum sections have been failed in the exam. The notebook qualification obtained during the first exam call will only be valid until the second exam call.

Notebooks should be presented separately for Seminars 1-4, Seminars 5-8 and Practicum as they are marked by different professors. Notebooks will be handed in using A4 sheets of paper in a transparent cover, without any springs, clips or staples on them, so that the material can be duly separated and recycled. Students should clearly write in the front page their full name, type of notebook (as above) and a brief table of contents.

Handing in all notebooks is a prerequisite in order to obtain an Honours qualification, for those students with a top mark in the final exam.

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 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 (parcialmente en castelán) que foi editado como libro en 2001 (EC-505). Pode haber edicións mais recentes das demais referencias básicas.
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	
Physical Geography/610G02006	
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.