



## Teaching Guide

Identifying Data					2021/22
<b>Subject (*)</b>	Ecology II: Populations and Communities	<b>Code</b>	610G02040		
<b>Study programme</b>	Grao en Bioloxía				
Descriptors					
Cycle	Period	Year	Type	Credits	
Graduate	2nd four-month period	Third	Obligatory	6	
<b>Language</b>	Spanish				
<b>Teaching method</b>	Face-to-face				
<b>Prerequisites</b>					
<b>Department</b>	Bioloxía				
<b>Coordinador</b>	Rodríguez Roiloa, Sergio	<b>E-mail</b>	sergio.roiloa@udc.es		
<b>Lecturers</b>	Rodríguez Roiloa, Sergio Ruiz De la Rosa, Jose Miguel	<b>E-mail</b>	sergio.roiloa@udc.es jose.miguel.ruiz.delarosa@udc.es		
<b>Web</b>					
<b>General description</b>	Population ecology. Species interactions. Communities				
<b>Contingency plan</b>	<p>In the event that the classroom assigned for the subject has no room for the number of registered students, additional classrooms will be assigned to teach lectures using the Teams platform.</p> <p>1. Modifications to the contents: No changes will be implemented.</p> <p>2. Methodologies *Teaching methodologies that are maintained: Online model: All teaching methodologies will be carried out online (virtual tele-teaching).</p> <p>*Teaching methodologies that are modified: Online model: THEORY: Theory lectures will be done online using the Teams platform. Theory teaching materials will be available on the virtual campus platform. . SEMINARS: Seminar lectures will be done online using the Teams platform. Seminar teaching materials will be available on the virtual campus platform. LABS: Lab activities will be adapted to non-required attendance and will be performed online only, using the Teams platform. Lab lecture material will be available on the virtual campus platform. TUTORING: Tutoring will be maintained online via email and/or Teams video-calls.</p> <p>3. Mechanisms for personalized attention to students: Teams: Continuous individual tutoring (upon demand). Weekly group meetings. E-mail: Continuous individual tutoring (upon demand). Virtual campus platforms: Continuous individual tutoring (upon demand). All teachings contents will be available on the virtual campus platform.</p> <p>4. Modifications in the evaluation: No changes will be implemented.</p> <p>*Evaluation observations: Online model: Assignments, mid-term tests and the final exam will be implemented via the virtual campus platform.</p> <p>5. Modifications to the bibliography or webgraphy: No changes will be implemented.</p>				



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	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	
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			
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## 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 will be recorded.

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 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



<p><b>Basic</b></p>	<ul style="list-style-type: none"> <li>- Alstad DN (2001). Basic Populus models of ecology. New Jersey: Prentice-Hall</li> <li>- Alstad DN (). www.cbs.umn.edu/populus.</li> <li>- Begon M, Harper JL, Townsend CR (1999). Ecología: individuos, poblaciones y comunidades. Barcelona: Omega</li> <li>- Begon M, Howarth RW, Townsend CR (2014). Essentials of Ecology. USA: Wiley</li> <li>- Krebs CJ (1986). Ecología: el análisis experimental de la distribución y la abundancia. Madrid: Pirámide</li> <li>- Molles M (2006). Ecología: Conceptos y Aplicaciones. Madrid: McGraw - Hill</li> <li>- Piñol J, Martínez-Vilalta J (2006). Ecología con números. Barcelona: Lynx</li> <li>- Piñol J, Martínez-Vilalta J (). www.ecologiaconnumeros.uab.es.</li> <li>- Ricklefs RE (1998). Invitación a la ecología: la economía de la naturaleza. Madrid: Panamericana</li> <li>- Smith RL, Smith TM (2000). Ecología. Madrid: Pearson</li> <li>- Smith TM, Smith RL (2012). Elements of Ecology. USA: Pearson</li> <li>- Molles M (2013). Ecology: concepts and applications. McGraw Hill</li> </ul> <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><b>Complementary</b></p>	<ul style="list-style-type: none"> <li>- Gotelli NJ (1995). A primer of ecology. Sunderland: Sinauer</li> <li>- Margalef R (1974). Ecología. Barcelona: Omega</li> <li>- Odum EP, Barret GW (2006). Fundamentos de ecología. Mexico: Thomson</li> </ul>

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