

GRADO EN CIENCIAS AMBIENTALES

DATOS DE LA ASIGNATURA

ASIGNATURA	CONSERVATION BIOLOGY	SUBJECT	CONSERVATION BIOLOGY
CÓDIGO	757709211		
MÓDULO	CONSERVACIÓN, PLANIFICACIÓN Y GESTIÓN DEL MEDIO RURAL Y URBANO	MATERIA	BIOLOGÍA DE LA CONSERVACIÓN
CURSO	3 ^º	CUATRIMESTRE	1 ^º
DEPARTAMENTO	CIENCIAS INTEGRADAS	ÁREA DE CONOCIMIENTO	ZOOLOGÍA
DEPARTAMENTO	CIENCIAS INTEGRADAS	ÁREA DE CONOCIMIENTO	BOTÁNICA
CARÁCTER	OBLIGATORIA	CAMPUS VIRTUAL	MOODLE

DISTRIBUCIÓN DE CRÉDITOS

	TOTAL	TEÓRICOS GRUPO GRANDE	TEÓRICOS GRUPO REDUCIDO	PRÁCTICAS DE INFORMÁTICA	PRÁCTICAS DE LABORATORIO	PRÁCTICAS DE CAMPO
ECTS	6	2.52	1.48	0	0	2

DATOS DEL PROFESORADO

COORDINADOR

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OTROS DOCENTES

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DESCRIPCIÓN GENERAL DE LA ASIGNATURA

DESCRIPCIÓN GENERAL

Conservation Biology is the study of attempts to protect and preserve biodiversity. It focuses on both the biological and social factors that affect the success of conservation efforts and on determining ecosystems and species whose conservation is a high priority.

Under the influence of the biodiversity crisis, the discipline of Conservation Biology has developed into an important field of study, drawing material from all areas of biology and from law and management, and with its own conceptual and theoretical strengths. The aim of this subject is to provide students with a multidisciplinary education in Conservation Biology based on the core subjects of botany, zoology, ecology, genetics, etc., plus appropriate areas from mathematics and statistics, management and policy.

Conservation biology is an essential subject in the definition of the professional profile for the future Graduate in Environmental Sciences. In the first place, it is crucial to delimit scientifically the main problem that is the *raison d'être* of these professionals: the environmental crisis unleashed by the human being, responsible for the sixth extinction. Secondly, it contributes to the development of a sensitivity to this ecological crisis and to the adoption of positive attitudes toward its resolution. Third, it provides practical tools and basic theoretical foundations to address the main conservation problems, especially those from our nearest environment.

Due to its global and synthetic nature, Conservation Biology participates from the knowledge the student has got throughout the previous courses, such as Fauna, Botany, Ecology, Biology, Environmental Engineering, Environmental Law and Administration, Environment and Society, etc. With all them, it establishes links useful to consolidate the multidisciplinary formation of the future professional in order to face properly the environmental problems that cause real and deep impacts on biodiversity.

ABSTRACT

Conservation Biology is the study of attempts to protect and preserve biodiversity. It focuses on both the biological and social factors that affect the success of conservation efforts and on determining ecosystems and species whose conservation is a high priority.

Under the influence of the biodiversity crisis, the discipline of Conservation Biology has developed into an important field of study, drawing material from all areas of biology and from law and management, and with its own conceptual and theoretical strengths. The aim of this subject is to provide students with a multidisciplinary education in Conservation Biology based on the core subjects of botany, zoology, ecology, genetics, etc., plus appropriate areas from mathematics and statistics, management and policy.

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Due to its global and synthetic nature, Conservation Biology participates from the knowledge the student has got throughout the previous courses, such as Fauna, Botany, Ecology, Biology, Environmental Engineering, Environmental Law and Administration, Environment and Society, etc. With all them, it establishes links useful to consolidate the multidisciplinary formation of the future professional in order to face properly the environmental problems that cause real and deep impacts on biodiversity.

OBJETIVOS: RESULTADOS DEL APRENDIZAJE

On completion of this course the successful learner will be able to:

- Demonstrate an understanding of the ecological and evolutionary principles that underlie biological diversity.
- Explain proximate and ultimate threats to biodiversity and the general consequences of biodiversity loss.

- Articulate the enormous responsibility humans have as global land stewards.
- Identify linkages among conservation problems across biological scales (genes to landscapes) and geographical scales (local to global).
- Demonstrate how ecological and evolutionary principles are applied to solving conservation problems.
- Apply critical reasoning skills to assessment, analysis, and synthesis of conservation problems and solutions.
- Demonstrate a greater understanding of conservation problems and cultural differences in perceptions of problems and appropriate solutions.

REPERCUSIÓN EN EL PERFIL PROFESIONAL

This subject is essential to define the professional profile of the future Graduate in Environmental Sciences. In the first place, it is decisive to delimit scientifically the main problem that is the reason of being of these professionals: the environmental crisis carried out by man, responsible for the sixth mass extinction. Second, it contributes to the development of the sensitivity to this ecological crisis and to the adoption of positive attitudes towards the resolution of the problems. Third, it provides practical tools and basic theoretical foundations to address the main conservation problems of plants and animals, especially those in our immediate environment.

RECOMENDACIONES AL ALUMNADO

This is a course for people who are interested in biodiversity and in protecting and restoring the natural environment. Students must have a range of skills from field and lab work to communication and research. To enroll in the program you must be studying a degree in Environmental Science, Biology or similar. People with a sound knowledge in ecology, evolution, zoology, botany (or equivalent) would be welcome.

English level: B2.

COMPETENCIAS

COMPETENCIAS BÁSICAS

CB1 - Que los estudiantes hayan demostrado poseer y comprender conocimientos en un área de estudio que parte de la base de la educación secundaria general, y se suele encontrar a un nivel que, si bien se apoya en libros de texto avanzados, incluye también algunos aspectos que implican conocimientos procedentes de la vanguardia de su campo de estudio.

CB2 - Que los estudiantes sepan aplicar sus conocimientos a su trabajo o vocación de una forma profesional y posean las competencias que suelen demostrarse por medio de la elaboración y defensa de argumentos y la resolución de problemas dentro de su área de estudio.

CB3 - Que los estudiantes tengan la capacidad de reunir e interpretar datos relevantes (normalmente dentro de su área de estudio) para emitir juicios que incluyan una reflexión sobre temas relevantes de índole social, científica o ética.

CB4 - Que los estudiantes puedan transmitir información, ideas, problemas y soluciones a un público tanto especializado como no especializado.

CB5 - Que los estudiantes hayan desarrollado aquellas habilidades de aprendizaje necesarias para emprender estudios posteriores con un alto grado de autonomía.

COMPETENCIAS GENERALES

G3 - Comunicación oral y escrita.

G6 - Capacidad de gestión de la información.

G12 - Aprendizaje autónomo.

G13 - Adaptación a nuevas situaciones.

G14 - Razonamiento crítico.

G18 - Sensibilidad hacia temas medioambientales.

COMPETENCIAS TRANSVERSALES

CT1 - Que los estudiantes hayan desarrollado y demostrado poseer habilidades de aprendizaje y conocimientos procedentes de su campo de estudio, siendo capaces de aplicarlos en su trabajo, interpretando datos relevantes para emitir juicios de temas de diversa índole pudiendo transmitirlos a un público tanto especializado como no especializado.

COMPETENCIAS ESPECÍFICAS

E19 - Capacidad en la elaboración e interpretación de cartografías temáticas.

TEMARIO Y DESCRIPCIÓN DE LOS CONTENIDOS

TEORÍA

BIG GROUP

1. **CONSERVATION BIOLOGY, BIODIVERSITY AND CONSERVATION MANAGEMENT (3 h)** 1.1. Introduction.1.2. What is biodiversity?1.3. Ecosystem management and biodiversity conservation.
2. **HUMAN ECOLOGY AND BEHAVIOR AND CONSERVATION OF BIODIVERSITY (3 h)** 2.1. Exploitation of resources.2.2. Growth models.2.3. Carrying capacity.2.4. Consumption rates.2.5. Biological efficiency, consumption rate and human behavior.
3. **WHY ARE THE SPECIES EXTINGUISHED? (6 h)** 3.1. Introduction.3.2. Disturbances3.3. Threats to biodiversity.3.4. Vulnerability to extinction.3.5. Extinctions
4. **THE PROBLEMS OF THE SMALL POPULATIONS AND THEIR CONSERVATION (3 h)** 4.1. Introduction.4.2. Genetic factors.4.3. Demographic factors.4.4. Population Viability Analysis.
5. **DIAGNOSIS OF CONSERVATION PROBLEMS: HABITAT (3 h)** 5.1. Study of the habitat.5.2. Habitat loss and fragmentation.5.3. Loss of species.5.4. Edge effect.5.5 Importance of the location of the fragments.
6. **GLOBAL CHANGE AND CONSERVATION OF BIODIVERSITY (3 h)** 6.1. Introduction.6.2. Sea level rise.6.3. Alteration of phenological cycles.6.4. Oceans acidification.6.5. Altitudinal and latitudinal migration.
7. **CRITERIA FOR VALUATION OF SPECIES AND AREAS (3 h)** 7.1. General evaluation criteria.7.2. Criteria of valuation of species. The IUCN.7.3. Criteria for the assessment of areas.
8. **SOME GENERAL SOLUTIONS TO CONSERVATION PROBLEMS (6 h)** 8.1. Design and management of protected areas. 8.2. Ecological corridors 8.3. Mitigation of the impact of urbanization and infrastructures. 8.4. Environmental impact evaluation. 8.5. Control of alien species. 8.6. In situ conservation. 8.7. Ex situ conservation. 8.8. Captive breeding : basic ideas. 8.9. Reintroductions and reinforcements. 8.10. Restoration ecology.

SMALL GROUP

Activity 1 Seminar: Scientific information in Conservation Biology.

Activity 2 Seminar: Identification and recognition of biodiversity: birds.

Activity 3 Practice: Evaluation of the biodiversity of the avifauna in relation to the characteristics of the habitat.

Activity 4 Seminar: Conservation, citizen science and social networks.

Activity 5 Seminar: The promotion of transparency in the Science of Conservation.

Activity 6 Seminar: The dilemmas of Climate Change.

PRÁCTICAS DE CAMPO

Country field trip 1: **Natural Park Sierra de Grazalema** (19-20/10/18).

Country field trip 2: **Natural Landscape Marismas del Odiel** (23/11/17)

Country field trip 2: **Biological Reserve of Doñana**(14/12/17)

In these outings, an on-site practice will be carried out, which must be delivered in writing by each student.

METODOLOGÍA DOCENTE

Grupo grande	<ul style="list-style-type: none"> • Método expositivo (lección magistral). • Exposiciones audiovisuales. • Conferencias invitadas. • Realización de seminarios, talleres o debates. • Estudio de casos. • Resolución de ejercicios y problemas. • Realización de proyectos. • Ejercitar, ensayar y poner en práctica conocimientos previos y aplicar métodos propios de la disciplina.
Grupo reducido	<ul style="list-style-type: none"> • Método expositivo (lección magistral). • Exposiciones audiovisuales. • Conferencias invitadas. • Realización de seminarios, talleres o debates. • Estudio de casos. • Resolución de ejercicios y problemas. • Realización de proyectos. • Ejercitar, ensayar y poner en práctica conocimientos previos y aplicar métodos propios de la disciplina. • Visitas a centros, instituciones, empresas u otros lugares de interés docente.
Prácticas de campo	<ul style="list-style-type: none"> • Método expositivo (lección magistral). • Exposiciones audiovisuales. • Conferencias invitadas. • Realización de seminarios, talleres o debates. • Estudio de casos. • Resolución de ejercicios y problemas. • Realización de proyectos. • Ejercitar, ensayar y poner en práctica conocimientos previos y aplicar métodos propios de la disciplina. • Visitas a centros, instituciones, empresas u otros lugares de interés docente. • Aprendizaje autónomo. • Aprendizaje cooperativo.

CRONOGRAMA ORIENTATIVO I

SEMANAS (S):	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14	S15
GRUPO GRANDE	T1	T1	T2	T2	T3	T3	T4	T4	T5	T5	T6	T7	T7		
GRUPO REDUCIDO	A1	A1	A2	A2	A3	A3	A4	A4	A5	A5	A6				
PRÁCTICAS DE LABORATORIO															
PRÁCTICAS DE INFORMÁTICA															
PRÁCTICAS DE CAMPO					C1			C2			C3				

EVALUACIÓN DE LA ASIGNATURA

PRIMERA EVALUACIÓN ORDINARIA (FEBRERO/JUNIO)

EVALUACIÓN CONTINUA

PORCENTAJE 35 %

Continuous assessment (35%): It consists in the evaluation of the follow-up of the course, including the attendance and participation to the classes, the activities and the field trips carried out during the course. This evaluation will involve up to 3.5 points in the final grade. To add these points, the student must have obtained in the final evaluation (final exam), at least 4.0 points.

Below is a Table with the scores awarded to each activity:

Activity 1	test	0.25
Activity 2	test	0.50
Activity 3	attendance and report delivery	0.50
Activity 4	Assistance and report	0.25
Activity 5	Assistance and report	0.50
Activity 6	Assistance and report	0.50

Field outputs Assistance and delivery of reports 1.00

¿Existe opción alternativa a la evaluación continua arriba contemplada? SÍ

Given the face-to-face nature of the subject, the attendance to class, either theory or practice, as a small group or activity, it is considered mandatory and will pass signature control. Those who do not attend at least 70% of the classes will have to complete an additional specific exam to be able to score in the continuous assessment. In the official exams, a specific exam will be given for those students who have not passed the continuous assessment or have not attended the sessions of small group activities and / or field trips. The exam will consist of a series of issues related to the content addressed in the small group activities and field trips.

EVALUACIÓN FINAL

PORCENTAJE 65 %

Final exam (65%): For the final evaluation there will be a single exam of the subject with two sections: 1. A questionnaire with short questions that requires the student an effort of reflection, synthesis and application of knowledge acquired during the course (50% of the grade). 2. A test type test that allows the teacher to know the overall degree of assimilation of the complete syllabus by the student (50% of the grade) FINAL GRADE: The final grade will be the sum of the continuous assessment and the final exam grade. To add the corresponding grade to the continuous assessment it will be essential to have obtained 4.0 points in the final exam. In the evaluation of both sections, oral expression and written will be assessed, as well as spelling mistakes.

¿Contempla una evaluación parcial voluntaria? NO

SEGUNDA EVALUACIÓN ORDINARIA (SEPTIEMBRE) Y OTRAS EVALUACIONES

The examination of the open-call of September and successive, will consist of the same sections as that of the first ordinary evaluation, with the same weighting, unless the student had not passed the continuous assessment. The grade of the continuous assessment will be saved for successive open-calls, as long as it is greater than or equal to 5.0 points. If it is not passed or has not been carried out completely or partially, the student will have to examine, in addition, the contents of the continuous assessment taught in the corresponding academic course. The note of the second evaluation and successive, will be as follows: Continuous evaluation: 35% (saved from the first call or specifically examined). Final evaluation: 65% (50% short questions + 50% test type).

OTROS CRITERIOS DE EVALUACIÓN

¿Contempla la posibilidad de subir nota una vez realizadas las pruebas?

NO

Requisitos para la concesión de matrícula de honor

Graduate with Honor will be awarded to the best grade of the group, after consensus of the teachers of the course.

REFERENCIAS

BÁSICAS

Manuales y libros

DELIBES, M. 2001. Vida. La naturaleza en peligro. Temas de Hoy.

GASTON, K.J. & SPICER, J.I. 2004. Biodiversity. An Introduction. Blackwell Publishing, Oxford, UK.

GIBBS, J. P. M. L. HUNTER & E. J. STERLING. 2008. Problem-Solving in Conservation Biology and Wildlife Management, 2nd Edition. Wiley-Blackwell.

GROOM, M. J., MEFFE, G. K. & CARROLL, C. R. 2006. Principles of Conservation Biology. Sinauer. Associates Inc. USA.

HUNTER M.L. & GIBBS J.P. 2009. Fundamentals of Conservation Biology. Wiley-Blackwell; Cambridge; UK.

KAREIVA, P. & M. MARVIER. 2015. Conservation science: balancing the needs of people and nature. Roberts and Company.

MACDONALD D. W. & K. SERVICE. 2006. Key Topics in Conservation Biology. Blackwell Publishing Ltd, Oxford, UK.

SINCLAIR, A., FRYXELL, J. & CAUGHLEY, G. 2005. Wildlife Ecology, Conservation and Management. Blackwell Science. ISBN-10: 1405107375.

SODHI, N. S. & EHRLICH, P. R. 2010. Conservation Biology for All. Oxford University Press, Oxford.

TELLERÍA J.L. 2012. Introducción a la conservación de las especies. Tundra Ediciones, Valencia.

VV.AA. 2004. Los retos ambientales del siglo XXI: la conservación de la biodiversidad en España. CSIC & Fundación BBVA. 346 páginas.

OTROS RECURSOS

Publicaciones periódicas

Revista Quercus. <http://www.revistaquercus.es/>

Revista Ecosistemas. <http://www.revistaecosistemas.net/index.php/ecosistemas>

Webs

- Sociedad Española de Biología de la Conservación de Plantas:

<http://www.conservacionvegetal.org/>

- Asociación Española de Ecología Terrestre:

<http://www.aeet.org/Default.aspx>

- Asociación Ibérica de Limnología (AIL)

<http://www.limnetica.com/ail/index.htm>

- Unión Internacional de Conservación de la Naturaleza (UICN)

<http://www.uicn.es/>