



Universidad de Jaén

FACULTY OF EXPERIMENTAL SCIENCES

Plant conservation biology

2024-2025
Grado en Biología



CREA



Acceso Mayores 40

Guías docentes UJA

Horarios de tutorías

Llamamientos PEvAU

Movilidad (Coordinador)

P.O.D.

Solicitud bilingüismo

Syllabus 2024-25 - 10213015 - Plant Conservation Biology (Biología de la conservación de plantas)

Caption

- Level 1: Tutorial support sessions, materials and exams in this language
- Level 2: Tutorial support sessions, materials, exams and seminars in this language
- Level 3: Tutorial support sessions, materials, exams, seminars and regular lectures in this language

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DEGREE:

Grado en Biología

FACULTY:

FACULTY OF EXPERIMENTAL SCIENCES

ACADEMIC YEAR:

2024-25

COURSE:

Plant Conservation Biology

SYLLABUS

1. COURSE BASIC INFORMATION

NAME: Plant Conservation Biology

CODE: 10213015

ACADEMIC YEAR: 2024-25

LANGUAGE: English

LEVEL: 1

ECTS CREDITS: 6.0

YEAR: 4

SEMESTER: PC

2. LECTURER BASIC INFORMATION

NAME: SALAZAR MENDIAS, CARLOS

DEPARTMENT: U102 - BIOLOGIA ANIMAL, BIOL.VEGETAL Y ECOLOGIA

FIELD OF STUDY: 063 - BOTÁNICA

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LANGUAGE: English

LEVEL: 1

3. CONTENT DESCRIPTION

THEORY

1. **Introduction to Plant Conservation Biology.** Historical overview. Plant diversity. Threats to plant diversity. The importance of conserving and managing plants of botanical and ethnobotanical interest.

2. **Ethnobotany.** Concept and historical background. Ethnobotanical methodology. Evolution of ethnobotanical studies. Ethnobotanical specialities. Areas with high ethnobotanical interest. Current state and perspectives of Ethnobotany in Spain.

3. **Botanical resources.** Useful plants: agricultural, medicinal, aromatic, melliferous and ornamental species.

4. **Autoecology of plants.** Light, soil, temperatura, moisture and anthropozoogenic activities. Biotypes or vital forms. Bioindicators.

5. **Prioritary species in Plant Conservation.** Chorology notions. Rarity and its aspects. Stenochory categories. Endemic and rare plants. Plant diversity distribution.

6. **Origin of Mediterranean and Andalusian flora.** Introduction. From Archaeozoic to Oligocene. Miocene. Pliocene. Quaternary glaciations. Holocene.

7. **Invasive plants.** Allocthonous, invasive and transformer plants. Clasification of alien plants. Habitats susceptible to invasion. Prevention and control. Alien plants in Spain and Andalusia. Legislation on alien plants.

8. **Threatened flora.** Risk factors. Criteria for determining threat degree: IUCN categories. Priorities in protection. Red Lists and Red Books.

9. **Legal tools for plant management and conservation.** Conventions and Directives. National and authonomical law.

10. **Scientific tools for plant management and conservation.** Demographic and genetic studies. Plant reproductive biology. Plant breeding systems. Pollination. Seed and fruit dispersal. Seed dormancy. Phenomorphology.

11. **Technical tools for plant management and conservation.** *In situ* conservation techniques. Protected Natural Spaces. Andalusian ENP network. Biosphere reserves. Natura 2000 network. Micro-reserves network of Valencia Community. *In situ* Botanical Gardens. Exclusion fencing.

12. **Ex situ conservation techniques.** Advantages of *ex situ* techniques. Plant Germplasm Banks: Seed Banks. Field collections. Pollen banks. *In vitro* collections. Other *ex situ* techniques. *Ex situ* Botanical Gardens.

13. **Integrated conservation.** Collection techniques. Restitution techniques: Strengthening. Reintroduction. Introduction. Restoration.

14. **Conservation and Recovery Plans.** Contents of a recovering plan for threatened flora. Phases of a recovery plan for threatened flora. Examples.

15. **Informative tools for plant management and conservation.** Action mechanisms. Environmental education programs.

16. **The future of plant conservation.** Conservation and sustainable development. The role of biologists in plant conservation.

PRACTICES

1. Field practice: *In situ* conservation techniques
2. Visit to Plant Germplasm Bank: *Ex situ* conservation techniques
3. Laboratory practice: Red Books and Red Lists
4. Computer practice 1: Flora databases (I)
5. Computer practice 2: Flora databases (II)

SEMINARS

1. Ethnobotany
2. *In situ* plant conservation
3. The endemic flora in Andalusia
4. Invasive plants

The contents of this subject connect with the SDG-15 (LIFE AND TERRESTRIAL ECOSYSTEMS), specifically with the goals:

- 15.1. Ensure the conservation and sustainable use of ecosystems.
- 15.5. Measures against the degradation and loss of biodiversity.
- 15.6. Access and proper use of genetic resources.
- 15.8. Prevention of invasive species.
- 15.9. Integration of environmentally sensitive plans.

4. COURSE DESCRIPTION AND TEACHING METHODOLOGY

THEORY

Lectures: 3 ECTS, using ICTs supported by teaching material in the Virtual Teaching Platform of the University, the Library and Internet.

Seminars: 0.8 ECTS, using ICTs supported by teaching material in the Virtual Teaching Platform of the University, the Library and Internet. Seminars help students to get the skills to catalogue, evaluate and manage natural resources; sampling, characterizing and managing populations and communities; managing, conserving and recovering populations and ecosystems; obtaining information, designing experiments and interpreting results in plant conservation matters.

Thus, the student will acquire the competencies CT1, CT2, CT3, CT4, CT6, CT7, CT9, CE15, CE16.

PRACTICES 2 ECTS

Laboratory and informatics practices will be carried out in small student groups both in laboratories and computer classrooms. The teacher will explain the fundamentals and development of practices. Supported by practice scripts, the students will carry out the procedures to obtain the results that will be analyzed and

discussed in order to get final conclusions. The practice script will be available in the Virtual Teaching Platform of the University providing the objectives, materials and experimental methodology and will be also used to compile data and results.

Field practices will be carried out in small student groups out of the classrooms. The teacher will explain the fundamentals and development of practices. Supported by practice scripts, the students will carry out the procedures to obtain the results that will be analyzed and discussed in order to get final conclusions. The practice script will be available in the Virtual Teaching Platform of the University providing the objectives, materials and experimental methodology and will be also used to compile data and results.

Practices will complement the and will help the student to acquire the skills to: catalogue, evaluate and manage natural resources; sampling, characterizing and managing populations and communities; managing, conserving and recovering populations and ecosystems; obtaining information, designing experiments and interpreting results in plant conservation matters.

Thus, students will acquire the competencies CT5, CT8, CT9, CT10, CE15

Tutorials 0.2 ECTS

Specialized tutorials will be held to supervise works and reports. Tutorials will help students to acquire skills to manage information, designing experiments and interpreting practical results.

Students with special educational needs should contact the Student Attention Service (Servicio de Atención y Ayudas al Estudiante) in order to receive the appropriate academic support

5. ASSESSMENT METHODOLOGY

THEORY (50%). Written tests and exams. CG10, CT3, CT4, CT6, CT7, CT9, CT10, CE15, CE16.

PRACTICES (20%). Written exam. CG10, CT1, CT2, CT3, CT4, CT5, CT6, CT7, CT8, CT9, CT10, CE15, CE16.

REPORTS OF PRACTICES AND SEMINARS (20%). CG10, CT1, CT2, CT3, CT4, CT5, CT6, CT7.

ATTENDANCE, PARTICIPATION AND INTEREST (10%). Attendance control. CT10. Attendance: 0,8 points (whenever the student has attended 50% of classes). Participation and interest: 0,2 points of overall mark.

6. BOOKLIST ([Access the bibliography in the Library catalog](#))

MAIN BOOKLIST:

- Biología de la conservación de plantas amenazadas. Edition: -. Author: -. Publisher: [Madrid]: Organismo Autónomo Parques Nacionales, D.L. 2002 ([Library](#))
- Protección de la flora en Andalucía. Edition: -. Author: Hernández Bermejo, J. Esteban. Publisher: Sevilla: Agencia del Medio Ambiente, D. L. 1994 ([Library](#))
- Especies vegetales protegidas en España: plantas vasculares (Península Ibérica y Baleares). Edition: -. Author: Devesa Alcaraz, Juan Antonio. Publisher: Madrid: Organismo Autónomo Parques Nacionales, 2004 ([Library](#))
- Conservación 'ex situ' de plantas silvestres. Edition: -. Author: -. Publisher: [Oviedo] : Gobierno del Principado de Asturias ; Obra Social 'la Caixa', 2008.
- A primer of conservation biology. Edition: 2nd ed. Author: Primack, Richard B.. Publisher: Sunderland: Sinauer, cop. 2000 ([Library](#))

ADDITIONAL BOOKLIST:

- Flora alóctona invasora en Bizkaia. Edition: -. Author: HERRERA, M. & J.A. CAMPOS. Publisher: Diputación Foral de Navarra ([Library](#))
- Atlas y Libro Rojo de la Flora Vascular Amenazada de España. Manual de metodología del trabajo corológico y demográfico. Edition: -. Author: IRIONDO, J.M.. Publisher: Dirección General de Conservación de la Naturaleza y Sociedad Española de Biología de la Conservación de Plantas ([Library](#))
- Plant breeding systems. Edition: [1rst, repr.]. Author: Richards, A. J.. Publisher: London [etc.]: Chapman & Hall, 1994 ([Library](#))
- INTRODUCCION a la flora andaluza. Edition: -. Author: -. Publisher: Sevilla: Agencia del Medio Ambiente, D.L. 1993 ([Library](#))
- Plant conservation [Recurso electrónico] : an ecosystem approach. Edition: -. Author: Hamilton, A. C. (Alan Charles), 1945-. Publisher: London : Earthscan, 2006. ([Library](#))
- Ex situ plant conservation [Recurso electrónico] : supporting species survival in the wild. Edition: -. Author: -. Publisher: Washington, DC : Island Press, c2004. ([Library](#))
- Atlas y libro rojo de la flora vascular amenazada de España: taxones prioritarios. Edition: [2ª ed., reimp.]. Author: -. Publisher: Madrid : Ministerio de Medio Ambiente, Dirección General para la biodiversidad, 2007 ([Library](#))
- Atlas y libro rojo de la flora vascular amenazada de España : adenda 2006. Edition: -. Author: -. Publisher: Madrid: Organismo Autónomo de Parques Nacionales, 2007 ([Library](#))
- Atlas y libro rojo de la flora vascular amenazada de España: adenda 2008. Edition: -. Author: -. Publisher: Madrid : Organismo Autónomo Parques Nacionales, 2009 ([Library](#))
- Libro rojo de la flora silvestre amenazada de Andalucía. Edition: -. Author: -. Publisher: [Sevilla]: Consejería de Medio Ambiente, D.L. 1999-2000 ([Library](#))

- Lista roja 2008 de la flora vascular española = 2008 red list of Spanish vascular flora. Edition: -. Author: -. Publisher: Madrid : Sociedad Española de Biología de la Conservación de las Plantas, 2009 ([Library](#))
- Lista roja de la flora vascular de Andalucía. Edition: -. Author: -. Publisher: [Sevilla]: Consejería de Medio Ambiente, Junta de Andalucía, D.L. 2005 ([Library](#))
- Pollination ecology: a practical approach. Edition: -. Author: Dafni, A.. Publisher: Oxford [etc.]: Oirl Press, cop. 1992 ([Library](#))
- Atlas y libro rojo de la flora vascular amenazada de España : adenda 2017 edición y coordinación científica, Juan Carlos Moreno Saiz, José María Iriondo Alegría, Felipe Martínez García, Jorge Martínez Rodríguez y Carlos Salazar Mendías. Edition: -. Author: Salazar Mendías, Carlos, edit. lit. Publisher: Ministerio para la Transición Ecológica MITECO ([Library](#))

7. SUSTAINABLE DEVELOPMENT GOALS

Vida de ecosistemas terrestres

DETAILED INFORMATION

15.1. Ensure the conservation and sustainable use of ecosystems.

15.5. Measures against the degradation and loss of biodiversity.

15.6. Access and appropriate use of genetic resources.

15.8. Prevention of invasive species.

15.9. Integration of environmentally sensitive plans.

8. VIRTUAL / CLASSROOM TEACHING SCENARIO

1- TEACHING METHODOLOGY AND TRAINING ACTIVITIES

Formation activities	Format	Teaching description methodology:
30 hours of theory about the contents of the program	The teaching format will be in-person to the extent that the situation allows it	Sessions of master classes, one hour of duration each.
8 hours of training activities (seminars) on the contents of the program	The teaching format will be in-person to the extent that the situation allows it	Seminars of two hours each, held in the classroom.
2 hours of laboratory practices on the contents of the program	The teaching format will be in-person to the extent that the situation allows it	Two-hour laboratory session on teaching labs, broadcasting by videoconference to the rest of the group.
4 hours of computer practice on the contents of the program	The teaching format will be in-person to the extent that the situation allows it	Two two-hour sessions in a computer room.
14 hours of practice outside the classroom	The teaching format will be in-person to the extent that the situation allows it	Two trips outside the classroom of eight and six hours in duration, respectively, which will be attended by all the students.
Tutoring	The teaching format will be in-person to the extent that the situation allows it	Tutoring sessions will be done online (synchronous and asynchronous)

2- EVALUATION SYSTEM

Ordinary and extraordinary call

Assessment test	Format	Description	Percentage
Continuous assessment based on the participation and degree of interest of the student	The teaching format will be in-person to the extent that the situation allows it	based on the participation and degree of interest of the student	10%
Final exam	The teaching format will be in-person to the extent that the situation allows it	Short questions in the exam done in-person if the allowed capacity of the classroom is not exceeded (which is expected since there are <20 students regularly enrolled). In case of exceeding the capacity, then online examination with Google Forms in Meet session with activation of video camera for surveillance	50%
Evaluation of practical work (delivery of reports)	The teaching format will be in-person to the extent that the situation allows it	Evaluation of seminars, laboratory practices and practices outside the classroom.	40%

3- RESOURCES

The use of the necessary resources is offered by the University of Jaén (<https://www.ujaen.es/herramientas-para-la-docencia-y-la-evaluacion-virtual>) to teach and evaluate in the mixed scenario modality.

Electronic bibliographic resources from the Library of the University of Jaén will be used (<https://www.ujaen.es/servicios/biblio/>).

9. VIRTUAL TEACHING SCENARIO

1- TEACHING METHODOLOGY AND TRAINING ACTIVITIES

Formation activities	Format	Teaching methodology: description
30 hours of theory about the contents of the program	<i>Online</i>	Synchronous sessions of theory classes by videoconference.
8 hours of training activities (seminars) on the contents of the program	<i>Online</i>	Seminars of two hours each by videoconference.
6 hours of virtualized practices outside the classroom	<i>Online</i>	Synchronous sessions of virtualized field practice classes and visits to conservation institutions by videoconference of three hours each.

4 hours of computer practice on the contents of the program	Online	Two two-hour sessions by videoconference.
Tutoring	Online	All tutoring sessions will be done online (synchronous and asynchronous)

2- EVALUATION SYSTEM

Ordinary and extraordinary call

Assessment test	Format	Description	Percentage
Continuous assessment based on the participation and degree of interest of the student	Online	Based on the participation of the student	10%
Final exam	Online	Short questions and test-type questions by online examination with Google Forms in Meet session with activation of video camera for surveillance	50%
Evaluation of practical work (delivery of reports)	Online	Evaluation of seminars, laboratory practices and practices outside the classroom. exercises that replace practices outside the classroom.	40%

■ RESOURCES

The use of the necessary resources is offered by the University of Jaén (<https://www.ujaen.es/herramientas-para-la-docencia-y-la-evaluacion-virtual>) to teach and evaluate in the online scenario modality.

Electronic bibliographic resources from the Library of the University of Jaén will be used (<https://www.ujaen.es/servicios/biblio/>).

DATA PROTECTION CLAUSE (on line exams)

Institution in charge of data processing: Universidad de Jaén, Campus Las Lagunillas, s/n, 23071 Jaén

Data Protection Delegate: dpo@ujaen.es

Purpose: In accordance with the Universities Law and other national and regional regulations in force, carrying out exams and assessment tests corresponding to the courses students are registered in. In order to avoid frauds while sitting the exam, the exam will be answered using a videoconference system, being able the academic staff of the University of Jaén to compare and contrast the image of the person who is answering the exam with the student's photographic files. Likewise, in order to provide the exam with evidential content for revisions or claims, in accordance with current regulation frameworks, the exam will be recorded and stored.

Legitimacy: compliance with legal obligations (Universities Law) and other national and regional regulations currently in force.

Addressees: service providers who are the owners of the platforms where the exams are carried out and with whom the University of Jaén has signed the corresponding data access contracts.

Storage periods: those established in current in force regulations. In the specific case of exam videoconference recordings, not before the examination records and transcripts are closed or the exam can still be reviewed or challenged.

Rights: you can exercise your right of access, amendment, cancellation, opposition, suppression, limitation and portability by sending a letter to the postal or electronic address indicated above. In the event that you consider that your rights have been violated, you may submit a complaint to the Andalusian Council for Transparency and Data Protection www.ctpdandalucia.es

CLASS RECORDING CLAUSE PERSONAL DATA PROTECTION

Person in charge: Universidad de Jaén, Paraje Las Lagunillas, s/n; Tel.953 212121; www.ujaen.es

Data protection delegate (DPO): TELEFÓNICA, S.A.U. ; Email: dpo@ujaen.es

Procedure aim: To manage proper recordings of teaching sessions with the aim of facilitating learning process under a multimodal and/or online teaching

Period for record storage: Images will be kept during legal term according to regulations in force

Legitimacy: Data will be managed according to legal regulations (Organic Law 6/2001, December 21, on Universities) and given consent provided by selecting corresponding box in legal admission documents

Data recipients (transfers or assignments): Any person allowed to get access to every teaching modality

Rights: You may exercise your rights of access, rectification, cancellation, portability, limitation of processing, deletion or, where appropriate, opposition. To exercise these rights, you must submit a written request to the Information, Registration and Electronic Administration Service of the University of Jaén at the address above, or by e-mail to the address above. You must specify which of these rights you are requesting to be satisfied and, at the same time, you must attach a photocopy of your ID card or equivalent identification document. In case you act through a representative, legal or voluntary, you must also provide a document that proves this representation and identification. Likewise, if you consider that your right to personal data protection has been violated, you may file a complaint with the Andalusian Data Protection and Transparency Council www.ctpdandalucia.es

Campus Las Lagunillas s/n | 23071 - Jaén

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