

## COURSE DESCRIPTION

### COURSE DETAILS

Title (of the course): **BASES BOTÁNICAS PARA LA GESTIÓN DEL MEDIOAMBIENTE**

Code: 101539

Degree/Master: **GRADO DE CIENCIAS AMBIENTALES**

Year: 2

Name of the module to which it belongs: CONSERVACIÓN, PLANIFICACIÓN Y GESTIÓN DEL MEDIO RURAL Y URBANO

Field: ORDENACIÓN DEL TERRITORIO Y GESTIÓN DEL MEDIO AMBIENTE

Character: OBLIGATORIA

Duration: SECOND TERM

ECTS Credits: 6.0

Classroom hours: 60

Face-to-face classroom percentage: 40.0%

Study hours: 90

Online platform: <http://moodle.uco.es/moodlemap/>

### LECTURER INFORMATION

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### PREREQUISITES AND RECOMMENDATIONS

#### Prerequisites established in the study plan

English certificate B1

#### Recommendations

English certificate B1

### INTENDED LEARNING OUTCOMES

- |      |  |
|------|--|
| CB5  | Capable of integrating the experimental evidence found in field and/or laboratory studies with theoretical knowledge.  |
| CE11 | Capable of interpreting the biodiversity of the natural environment, the structure, physiology and features of living organisms and the concepts of evolution, taxonomy and development. |
| CE13 | Capable of identifying animal and plant species as part of the natural resources of our country, and their adaptation and conservation.  |
| CE23 | Be able to elaborate, manage and implement environmental plans and/or projects.  |



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## COURSE DESCRIPTION

### OBJECTIVES

- 1.- To learn a basic knowledge on Botany by integrating theoretical and practical lessons in the laboratory and at the field.
- 2.- To be able to identify vegetal organisms by using dicotomical keys.
- 3.- To know and to understand the plant biodiversity.
- 4.- To apply the botanical knowledge into their future environmental projects

### CONTENT

#### 1. Theory contents

Topic 1.- Fungi. Vegetative and reproductive characteristics. Main groups. Ecology. Lichens

Topic 2.- Algae. Vegetative and reproductive characteristics. Main groups. Ecology.

Topic 3.- Bryophytes. Vegetative and reproductive characteristics. Main groups. Ecology.

Topic 4.- The first vascular plants: Pteridophytes (ferns): Main characteristics and groups. Ecology.

Topic 5.- Spermatophytes. Gymnosperms. Main characteristics and groups. Reproductive structures.

Topic 6.- Cormophytes. The "cormo" concept. Morphology and structure of the standard cormo.

Topic 7.- Adaptative strategies of the vascular plants. Raunkiaer plant life-form and biological spectra.

Topic 8.- Systematic and Taxonomy. Organization levels. Main reproduction types in plants. Botany applications.

Topic 9.- Angiosperms. Main characteristics and groups. Reproductive structures. The flower and the fruit.

Polinization. Dispersion mechanisms of fruits.

Topic 10.- Angiosperms' classification. Monocotyledoneae. Main families: general characteristics, representative examples and distribution.

Topic 11.- Dicotyledoneae. Main families: general characteristics, representative examples and distribution. Topic

12.- Distribution areas. Corology. Cosmopolitan areas and endemisms. Threatened flora and conservation strategies: Botanical Garden. Biogeographical regions.

Topic 13.- Biogeographical regions and plant populations with an environmental interest in Spain. The Mediterranean forest and "dehesas". Conifers. River forest. Mountain vegetation. Agroforest systems.

#### 2. Practical contents

Laboratory:

1.- Talophytes and Fungi.

2.- Bryophytes and Ferns.

3.- Gymnosperms and visit to the University Forest.

4 to 8.- Angiosperms.

Field practical lessons:

9 y 10.- Sierra Morena.

11.- Botanical Garden of Córdoba.

### SUSTAINABLE DEVELOPMENT GOALS RELATED TO THE CONTENT

Good health and well-being

Quality education

Clean water and sanitation

Climate action

Life below water

Life on land

## COURSE DESCRIPTION

### METHODOLOGY

#### General clarifications on the methodology (optional)

The students will be provided with the guides and keys to follow the classes. There are interactive guides for identification designed by the teacher and available on the Moodle page. All the material they will be facilitated through the moodle page

#### Methodological adaptations for part-time students and students with disabilities and special educational needs

The same rules than to the rest of the students will be applied, except the field practices that will be optional

#### Face-to-face activities

Activity	Large group	Medium group	Total
<i>Assessment activities</i>	3	2	5
<i>Excursions</i>	-	9	9
<i>Lab practice</i>	-	16	16
<i>Lectures</i>	30	-	30
<b>Total hours:</b>	<b>33</b>	<b>27</b>	<b>60</b>

#### Off-site activities

Activity	Total
<i>Exercises</i>	20
<i>Information search</i>	5
<i>Reference search</i>	5
<i>Self-study</i>	60
<b>Total hours</b>	<b>90</b>

### WORK MATERIALS FOR STUDENTS

Case studies  
Coursebook  
Dossier  
Exercises and activities  
Oral presentations  
Placement booklet  
References

## COURSE DESCRIPTION

## EVALUATION

Intended learning	Exams	Project	Real and/or simulated tasks
CB5	X	X	X
CE11	X	X	X
CE13	X	X	X
CE23			X
<b>Total (100%)</b>	<b>70%</b>	<b>10%</b>	<b>20%</b>
<b>Minimum grade</b>	<b>5</b>	<b>5</b>	<b>5</b>

(\*)Minimum mark (out of 10) needed for the assessment tool to be weighted in the course final mark. In any case, final mark must be 5,0 or higher to pass the course.

**Attendance will be assessed?:**

No

**General clarifications on instruments for evaluation:**

General clarifications on instruments for evaluation: theoretical exam 60%, practical exam 20%, herbarium 10%, oral presentation 10%

**Clarifications on the methodology for part-time students and students with disabilities and special educational needs:**

Clarifications on the methodology for part-time students and students with disabilities and special educational needs: General clarifications on evaluation and methodological adaptation for part-time students: The same conditions.

**Clarifications on the evaluation of the first extraordinary call and extra-ordinary call for completion studies:**

The evaluation tools will be an exam of the theoretical part, an exam of the practical part and a project of an herbarium.

**Qualifying criteria for obtaining honors:**

Los establecidos por la normativa de la UCO. Nota mínima 9

## BIBLIOGRAPHY

**1. Basic Bibliography**

Devesa y Carrión (2012). Las plantas con flor. Apuntes sobre su origen, clasificación y diversidad. Publicaciones Universidad de Córdoba.

Font-Quer (2009). Diccionario de Botánica. Ed. Península.

Izco, Barreno, Brugués, Costa, Devesa, Fernández, Gallardo, Llimona, Salvo, Talavera y Valdés (2004). Botánica. Ed. McGraw-Hill- Interamericana.

Lüttge, Kluge & Bauer (1993). Botánica. Ed. Interamericana McGraw-Hill. Nabors, M. (2006). Introducción a la



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Botánica. Ed. Addison-Wesley.

Pineda, de Miguel, Casado y Montalvo editores (2002). La Diversidad Biológica de España. Ed. Prentice Hall-Pearson Education.

Raven, Evert & Eichhorn (1992). Biología de las Plantas. Vol. 1 y 2. Ed. Reverté.

### PRACTICAS

Aira, M.J., Vázquez, R.A. & Izco, J. (2014) Manual de prácticas de Botánica. Laboratorio y campo. USC Editora.

Cabeza (2010). Morfología vegetal. Ed. Universitat. García-Guardia (1988). Flora Silvestre de Andalucía. Ed.

Moreno, Jiménez, Gómez e Infante (1996). Setas de Andalucía. Con especial referencia a sus parques naturales. Ed.

Centro Andaluz del Libro. Salvo (1990). Guía de Helechos. Ed. Pirámide. Valdés, Talavera y Fernández-Galiano

editores (1987). Flora Vascular de Andalucía Occidental. Ed. Ketres Wirth, V. & Düll, R. (2004) Guía de Campo de

Líquenes, Musgos y Hepáticas. Ed. Omega

## 2. Further reading

Bibliografía complementaria Blanca (2001). Flora amenazada endémica de Sierra Nevada. Conserjería de Medio Ambiente Junta de Andalucía. [http://ahim.files.wordpress.com/2009/08/flora\\_amenazada\\_endemica\\_sierra\\_nevada\\_2001.pdf](http://ahim.files.wordpress.com/2009/08/flora_amenazada_endemica_sierra_nevada_2001.pdf)

Blanca, Cabezudo, Hernández-Bermejo,

Herrera, Muñoz y Valdés (2000). Libro Rojo de la Flora Silvestre. Amenazada de Andalucía. Consejería de Medio

Ambiente. Junta de Andalucía. Bañares, Blanca, Güemes, Moreno y Ortiz (2004). Atlas y Libro Rojo de la Flora

Vascular Amenazada de España. Ministerio de Medio Ambiente. [http://www.mma.es/secciones/biodiversidad/inventarios/inb/flora\\_vascular/pdf/c.pdf](http://www.mma.es/secciones/biodiversidad/inventarios/inb/flora_vascular/pdf/c.pdf)

Delibes de Castro (2001). La Naturaleza en Peligro. Ed. Temas de Hoy. Pascual (2001). La Vida Amenazada: Cuestiones Sobre La Biodiversidad. Ed. Nivela.

Schulze & Mooney editores (1994). Biodiversity And Ecosystem Function. Ed. Springer-Verlag. <http://www.juntadeandalucia.es/medioambiente>

## COORDINATION CRITERIA

Joint activities: lectures, seminars, visits ...

## SCHEDULE

Period	Assessment activities	Excursions	Lab practice	Lectures
1# Fortnight	0,0	0,0	2,0	4,0
2# Fortnight	0,0	0,0	4,0	4,0
3# Fortnight	2,0	0,0	4,0	6,0
4# Fortnight	0,0	3,0	2,0	4,0
5# Fortnight	0,0	3,0	2,0	4,0
6# Fortnight	0,0	3,0	2,0	4,0
7# Fortnight	3,0	0,0	0,0	4,0
<b>Total hours:</b>	<b>5,0</b>	<b>9,0</b>	<b>16,0</b>	<b>30,0</b>



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## COURSE DESCRIPTION

The methodological strategies and the evaluation system contemplated in this Course Description will be adapted according to the needs presented by students with disabilities and special educational needs in the cases that are required.

## CONTINGENCY PLAN: CASE SCENARIO A

Case scenario A will correspond to a diminished on-site academic activity due to social distancing measures affecting the permitted capacity of classrooms.

## METHODOLOGY

### General clarifications on the methodology on case scenario A

A multimodal (hybrid) teaching system will be adopted, combining both on-site and remote classes via videoconference (synchronous) that will be held in the timetable approved by the corresponding Faculty or School. The time distribution of teaching activities (both on-site and remote) will be decided by the aforementioned Faculties and Schools bearing in mind the permitted capacity of classrooms and social distancing measures as established at that time.

The students will be provided with the guides and keys to follow the classes. There are interactive guides for identification designed by the teacher and available on the Moodle page. All the material they will be facilitated through the moodle page

## EVALUATION

Intended learning	Exams	Project	Real and/or simulated tasks
CB5	X	X	X
CE11	X	X	X
CE13	X	X	X
CE23			X
<b>Total (100%)</b>	<b>70%</b>	<b>10%</b>	<b>20%</b>
<b>Minimum grade</b>	<b>4</b>	<b>4</b>	<b>4</b>

(\*)Minimum mark (out of 10) needed for the assessment tool to be weighted in the course final mark. In any case, final mark must be 5,0 or higher to pass the course.

### Attendance will be assessed (Scenario A)?:

No

### General clarifications on instruments for evaluation (Scenario A):

General clarifications on instruments for evaluation: theoretical exam 60%, practical exam 20%, herbarium 10%, oral presentation 10%

## COURSE DESCRIPTION

### **Clarifications on the methodology for part-time students and students with disabilities and special educational needs (Scenario A):**

Clarifications on the methodology for part-time students and students with disabilities and special educational needs: General clarifications on evaluation and methodological adaptation for part-time students: The same conditions.

## CONTINGENCY PLAN: CASE SCENARIO B

Case scenario B will bring about a suspension of all on-site academic activities as a consequence of health measures.

## METHODOLOGY

### **General clarifications on the methodology on case scenario B**

On-site teaching activities will be held via videoconference (synchronous) in the timetable approved by the corresponding Faculty or School. Alternative activities will be proposed for reduced groups in order to guarantee the acquisition of course competences.

The students will be provided with the guides and keys to follow the classes. There are interactive guides for identification designed by the teacher and available on the Moodle page. All the material they will be facilitated through the moodle page

## COURSE DESCRIPTION

## EVALUATION

Intended learning	Exams	Project	Real and/or simulated tasks
CB5	X	X	X
CE11	X	X	X
CE13	X	X	X
CE23			X
<b>Total (100%)</b>	<b>70%</b>	<b>10%</b>	<b>20%</b>
<b>Minimum grade</b>	<b>4</b>	<b>4</b>	<b>4</b>

(\*)Minimum mark (out of 10) needed for the assessment tool to be weighted in the course final mark. In any case, final mark must be 5,0 or higher to pass the course.

Moodle Tools	Exámenes	Proyecto	Pruebas de ejecución de tareas reales y/o simuladas
Cuestionario	X		
Pruebas simultáneas por videoconferencia			X
Tarea		X	

**Attendance will be assessed (Scenario B)?:**

No

**General clarifications on instruments for evaluation (Scenario B):**

General clarifications on instruments for evaluation: theoretical exam 60%, practical exam 20%, herbarium 10%, oral presentation 10%

**Clarifications on the methodology for part-time students and students with disabilities and special educational needs (Scenario B):**

Clarifications on the methodology for part-time students and students with disabilities and special educational needs: General clarifications on evaluation and methodological adaptation for part-time students: The same conditions.