

## COURSE DESCRIPTION

### COURSE DETAILS

Title (of the course): **GEOBOTÁNICA**

Code: 100432

Degree/Master: **GRADO DE BIOLOGÍA**

Year: 4

Field: OPTATIVA

Character: OPTATIVA

Duration: SECOND TERM

ECTS Credits: 6.0

Classroom hours: 60

Face-to-face classroom percentage: 40.0%

Study hours: 90

Online platform: <https://moodle.uco.es>

### LECTURER INFORMATION

Name: GALÁN SOLDEVILLA, CARMEN (Coordinator)

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Area: BOTÁNICA

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### PREREQUISITES AND RECOMMENDATIONS

#### Prerequisites established in the study plan

Those indicated for the module: The student will be able to matriculate in subjects of this Module once they have passed 60 credits of basic training, and at least another 60 compulsory credits. It is also needed be in possession of the B1 level accreditation in English.

#### Recommendations

None specified

## COURSE DESCRIPTION

### INTENDED LEARNING OUTCOMES

CE81n	Interpret different operational responses relating to particular environments.
CB4v5	Capable of critically analysing and synthesising, in line with the scientific method.
CB14v1	Ethical commitment to environmental and social issues.
CB16v1	Ability to organise and plan.
CB17v1	Knowledge of applied IT in Biology
CB18v4	Ability to put theory into practice.
CE13v4	Development of the skills to identify characteristics of mediterranean vegetation
CE13v5	Development of the skills to show, characterise and manage populations and plant communities.
CE82n	An understanding of Biology's fundamental concepts

### OBJECTIVES

The main goal is to introduce the students in the knowledge of vegetation, presenting as fundamental parameters:  
a) variations among different types of vegetation; b) causes of these variations; c) biogeographical prospect of these variations

### CONTENT

#### 1. Theory contents

##### Block 1. Introduction

1. Case study: studies on chorology, ecology, sociology and paleobotany of three forestry species in Central[1] Europe: *Fagus sylvatica*, *Quercus robur* and *Pinus sylvestris*. Definition and parts of the Geobotany.

##### Block 2. Phytogeography (Floristic Geobotany)

2. Geographic Ranges. Criteria to differentiate ranges. Cosmopolitan and Endemic geographic range. Origin and type of Endemism. Patterns of endemism.

3. Principles of discontinuity. Disjunction. Vicariance. Colonization density.

4. Evolution of the Geographical Range; diffusion. Biotic exchange and dispersion routes.

5. Floristic division of Biosphere. Geoelements or Floristic Elements. Criteria for delimitation of floristic units. Link taxa.

6. Holarctic Kingdom. Subkingdom Tetiano. Mediterranean Region. Biogeography in Spain.

7. Bioclimatology. Vegetation Regions. Vegetation Belts. Bioclimatic Belts.

##### Block 3. Geobotany and Phytosociology

8. Structure of the vegetation. Concepts. Criteria and Classification Systems. Structural Units and Structural Systems.

9. Floristic Units and Floristic Systems. I Methodology on Phytosociology. II Multivariate Methods.

10. Floristic Units and Floristic Systems. II Multivariate Methods. Ordination and Classification

11. Vegetation Dynamic. Daily and Seasonal Vegetation Dynamic, Phenology. Long Term Vegetation Dynamic, Succession. Succession types. Succession Units and Vegetation Series.

12. Climax definition. Actual, Potential and Primitive vegetation. Natural, Seminatural and Cultivated vegetation.

13. The concept of the plant community: a first approach; limiting environmental factors; the plant intrinsic properties. Plant community definition. The nature of the vegetation.

##### Block 4. Vegetation of the Iberian Peninsula.

14. Forests in the plant landscape of the Iberian Peninsula.

15. Changes in Forests by human actions.

## COURSE DESCRIPTION

### 2. Practical contents

- 1) Hypothesis and experimental design in biogeographic and vegetation studies
- 2) Sampling methods: a) Phytosociological inventories b) Transects c) Quadrants
- 3) Statistical analysis of vegetation data
- 4) Vegetation mapping
- 5) Visits and practical study of plant communities in the Mediterranean region

## SUSTAINABLE DEVELOPMENT GOALS RELATED TO THE CONTENT

Quality education  
Climate action  
Life on land

## METHODOLOGY

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

Part-time students and / or students with special needs should contact the teachers of the subject in the first two weeks of class for planning the necessary adaptations in the teaching methodology

### Face-to-face activities

Activity	Large group	Medium group	Total
<i>Assessment activities</i>	5	-	5
<i>Excursions</i>	-	21	21
<i>Lectures</i>	28	-	28
<i>Workshop</i>	-	6	6
<b>Total hours:</b>	<b>33</b>	<b>27</b>	<b>60</b>

### Off-site activities

Activity	Total
<i>Group work</i>	30
<i>Self-study</i>	60
<b>Total hours</b>	<b>90</b>

## WORK MATERIALS FOR STUDENTS

Dossier  
Placement booklet

## COURSE DESCRIPTION

### Clarifications

The dossier of documentation will include the presentations used in the theoretical teaching of the subject, as well as any documents or articles that are considered convenient for a better understanding or knowledge of the theoretical or practical contents. All this material, together with the practical notebook will be available in the virtual classroom (Moodle). The rest of the material will be facilitated by the teachers at all times for the proper performance of teaching. The field sampling material will also be available to students for their field working groups

## EVALUATION

Intended learning	Case study/clinical case discussion/scientific work discussion	Exams	Project
CB14v1			X
CB16v1			X
CB17v1			X
CB18v4	X		X
CB4v5	X		
CE13v4		X	X
CE13v5	X		X
CE81n		X	X
CE82n	X	X	
<b>Total (100%)</b>	<b>10%</b>	<b>50%</b>	<b>40%</b>
<b>Minimum grade</b>	<b>0</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.

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### Attendance will be assessed?:

No

### General clarifications on instruments for evaluation:

Minimum qualification to eliminate subject and period of validity of the partial qualifications: In theory, the subject will be eliminated with a note equal to or greater than 5 points. The notes of the theory parts will be valid until the second call of the same academic year. The practical note (project and case studies) will eliminate subjects with a note equal to or greater than 5 points, and will be valid for successive courses.

**NOTE ON PLAGIARISM:** Plagiarism is to use as own texts or ideas from other people without indicating their origin. It is essential to cite all those documents that have been used to write class work, journal article, conference paper, doctoral thesis, etc. Plagiarism attacks the basic pillars of the university institution and copying violates the main mission of the University. **Any kind of plagiarized work will receive a note of zero.**

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

Part-time students and / or students with special needs should contact the teachers of the subject in the first two weeks of class to agree on the necessary adaptations in the evaluation criteria

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

In this call, the student will carry out the theoretical exam and, optionally, the project and study cases. If project and study cases are not handled in, qualifications of these evaluation tools from previous academic courses will be used.

### Qualifying criteria for obtaining honors:

*The same criteria in the regulations of the University of Cordoba will be used*

## BIBLIOGRAPHY

### 1. Basic Bibliography

- Begon Harper & Townsend 1990. Ecology. Individuals, Populations and Communities. Blacwell Scientific. Publications.
- Braun Blanquet J. 1979. Fitosociología. Bases para el estudio de las comunidades vegetales. H. Blume Ediciones.
- Brown JH & Lomolino .V. 1998. Biogeography, 2ª edi. Sinauer Associates, Inc. Publishers, Sunderland. Massachusetts
- Géhu JM & Rivas-Martínez S. 1980. Notions fondamentales de Phytosociologie. H. Dierschcke (ed.) Ver.Intern. Symposien del IVV. Syntaxonomie: 5-33. Rinteln.
- Gleason HA & Cronquist A. 1964. The natural geography of plants. Columbia University Press. New York.
- Good R. 1974. The Geography of the Flowering Plants. Longman.
- Carrión JS. 2003. Evolución Vegetal. DM, Murcia Carrión JS. Munuera Giner M, Navarro Camacho C, Sáez Soto F. 2000. Paleoclimas de la vegetación cuaternaria en España a través del análisis Costa M, Morla C, Sainz H. (eds.) 1997. Los bosques ibéricos. Una interpretación geobotánica. Ed. Planeta. Barcelona.
- Kent M, Coker P. 1992. Vegetation description and analysis. A practical approach. Belhaven Press. London.
- Küchler AW. 1969. Natural and cultural vegetation. The Professional Geographer 21: 383-385.
- Küchler AW. 1988. Vegetation Mapping. Loidi J. (Ed.) 2017. The vegetation in the Iberian Peninsula. Springer
- Lomolino MV, Sax DV, Brown JH. 2004. Foundations of Biogeography. University Chicago Press.
- Lomolino MV, Riddle BR, Whittaker RJ. 2017. Biogeography: Biological Diversity across Space and Time. Sinauer Associates, Inc. Publishers, Sunderland, Massachusetts

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Moore DM. (ed.) 1982. Green Planet. The story of Plant Life on Earth. Cambridge University Press. Cambridge. 1

Mueller-Dombois D, Ellenberg H 1974. Aims and methods of vegetation ecology. Wiley International Edition Plant Communities of Spain and Portugal, Addenda to the Syntaxonomical Checklist of 2001. Itinera Geobotanica 15.

Navarro C, Sáez F, Munuera M, Carrión García J. Paleoclimas e historia de la vegetación cuaternaria en España través del análisis polínico. Viejas falacias y nuevos paradigmas. Complutum, 11: 115-142

Rivas-Martínez S. 1987. Memoria del Mapa de Series de Vegetación de España. ICONA. Madrid.

Rivas-Martínez S, Díaz TE, Fernández González F, Izco J, Loidi J, Lousa M, Penas A. 2002. Vascular Schulze ED, Beck E, Müller-Hohenstein K. 2002. Plant Ecology. Springer-Verlag,

Heidelberg Strasburger. 2004. Tratado de Botánica, 35ª edición. Ed. Omega, Barcelona

Takhtajan A. 1986. Floristic regions of the world. University of California Press. Berkeley Begon Harper & Townsend 1990. Ecology. Individuals, Populations and Communities. Blackwell Scientific. Publications

## 2. Further reading

None

## COORDINATION CRITERIA

Tasks deadlines

Visits organization

## SCHEDULE

Period	Assessment activities	Excursions	Lectures	Workshop
1# Week	0,0	3,0	2,0	0,0
2# Week	0,0	3,0	2,0	0,0
3# Week	0,0	3,0	2,0	0,0
4# Week	0,0	3,0	2,0	0,0
5# Week	0,0	3,0	2,0	0,0
6# Week	0,0	3,0	2,0	0,0
7# Week	0,0	3,0	2,0	0,0
8# Week	0,0	0,0	2,0	3,0
9# Week	0,0	0,0	2,0	3,0
10# Week	0,0	0,0	2,0	0,0
11# Week	0,0	0,0	2,0	0,0
12# Week	0,0	0,0	2,0	0,0
13# Week	0,0	0,0	2,0	0,0
14# Week	5,0	0,0	2,0	0,0
<b>Total hours:</b>	<b>5,0</b>	<b>21,0</b>	<b>28,0</b>	<b>6,0</b>

## 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.

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 theoretical part will be carried out following the general clarifications on methodology presented for Contingency Plans (Scenario A) The practical part will not undergo changes with respect to the classroom teaching scenario

## COURSE DESCRIPTION

## EVALUATION

Intended learnig	Case study/clinical case discussion/scientific work discussion	Exams	Project
CB14v1			X
CB16v1			X
CB17v1			X
CB18v4	X		X
CB4v5	X		
CE13v4		X	X
CE13v5	X		X
CE81n		X	X
CE82n	X	X	
<b>Total (100%)</b>	<b>20%</b>	<b>40%</b>	<b>40%</b>
<b>Minimum grade</b>	<b>2</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):**

Minimum qualification to eliminate subject and period of validity of the partial qualifications: In theory, the subject will be eliminated with a note equal to or greater than 4 points. The notes of the theory parts will be valid until the third call of the same academic year. The practical note (project and case studies) will eliminate subjects with a note equal to or greater than 4 points, and will be valid for successive courses. The students who, having presented the continuous assessment activities (practice reports and team work) have suspended these activities or the complete subject, they may appear again in these activities in the final calls of the subject (1st and 2nd call).

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

Part-time students and / or students with special needs should contact the teachers of the subject in the first two weeks of class to agree on the necessary adaptations in the evaluation criteria



## COURSE DESCRIPTION

### 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.

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 theoretical part will be carried out following the general clarifications on methodology presented for Contingency Plans (Scenario B) In case of health situation that makes impossible the practical lessons in field, they will be replaced by new practices for handling and analyzing data on the computer. These practices would be carried out by videoconference and connected to the UCO servers using Citrix technology.

### EVALUATION

Intended learning	Case study/clinical case discussion/scientific work discussion	Exams	Project
CB14v1			X
CB16v1			X
CB17v1			X
CB18v4	X		X
CB4v5	X		
CE13v4		X	X
CE13v5	X		X
CE81n		X	X
CE82n	X	X	
<b>Total (100%)</b>	<b>20%</b>	<b>40%</b>	<b>40%</b>
<b>Minimum grade</b>	<b>2</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.

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Moodle Tools	Exámenes	Proyecto	Supuesto práctico/discusión caso clínico/discusión trabajo científico
<i>Asistencia</i>	X	X	X
<i>Cuestionario</i>	X		
<i>Rúbrica de evaluación</i>	X		
<i>Tarea</i>		X	X

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

No

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

subject will be eliminated with a note equal to or greater than 4 points. The notes of the theory parts will be valid until the third call of the same academic year. The practical note (project and case studies) will eliminate subjects with a note equal to or greater than 4 points, and will be valid for successive courses. Each computer practice will be accompanied by a delivery of the work done in the practice and some reflections of the student. These deliveries will serve as continuous assessment activities in the section (practical cases / scientific work discussion). In addition, they will be of help to carry out the project in teams (continuous evaluation activity) The students who, having presented the continuous assessment activities (practice reports and team work) have suspended these activities or the complete subject, they may appear again in these activities in the final calls of the subject (1st and 2nd call).

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

Part-time students and / or students with special needs should contact the teachers of the subject in the first two weeks of class to agree on the necessary adaptations in the evaluation criteria