

**COURSE DATA****Data Subject**

Code	33788
Name	Biogeography
Cycle	Grade
ECTS Credits	6.0
Academic year	2018 - 2019

Study (s)

Degree	Center	Acad. year	Period
1318 - Degree in Geography and the Environment	Faculty of Geography and History	3	Second term

Subject-matter

Degree	Subject-matter	Character
1318 - Degree in Geography and the Environment	598 - Biogeography	Obligatory

Coordination

Name	Department
LA ROCA CERVIGON, MARIA NIEVES	195 - Geography

SUMMARY

Biogeography is concerned with the spatial and temporal distribution of living beings on the Earth's surface. As a part of Geography its object is the study of the territory as a system. One of the elements constituting this system is the vegetation (and wildlife). Biogeography doesn't study vegetation (and wild) in itself, but in relation to the other - natural and cultural - ingredients of the territory and of the landscape.

Based on knowledge acquired in previous subjects like *Introduction to Physical Geography* of the first year, Biogeography deepens in issues that concern the Biosphere by applying some of the teachings received in *Climatology*, *Geomorphology I* and *II* - for the special relevance of climate and topography as a distribution factor of life and their importance in explaining the vegetation landscape. Biogeography also returns on some of the techniques of interpretation and mapping, for interpretive reading of vegetation maps and aerial photos and to design simple vegetable distribution graphs.



PREVIOUS KNOWLEDGE

Relationship to other subjects of the same degree

There are no specified enrollment restrictions with other subjects of the curriculum.

Other requirements

It is recommended that students entering the course of Biogeography have previously studied and passed the following courses: Introduction to Geography and Environment, Introduction to Physical Geography, Cartography I, Climatology, Geomorphology I, Geomorphology II, Geography of Spain and Geography of the Land of Valencia.

OUTCOMES

1318 - Degree in Geography and the Environment

- Have capacity for analysis and synthesis.
- Have oral and written communication skills in one's own language and in a foreign language.
- Be able to work independently.
- Be able to work in interdisciplinary teams.
- Show motivation for quality, responsibility and intellectual honesty.
- Learn about physical geography.
- Learn about methodology and fieldwork.
- Be able to relate the natural environment and the social and human spheres.
- Analyse and value landscapes from a spatial-temporal perspective.
- Learn basic techniques for fieldwork in geography and particularly for reading and interpreting the landscape in geographic terms.

LEARNING OUTCOMES

To know and to know how to apply the fundamental concepts of Biogeography, with special attention to the Phytogeography and to learn about the scientific context of these concepts.

2. To know and to use the fundamental biogeographical literature sources and to be able to extract from them the basic biogeographical knowledge, such as: the patterns of species distribution across geographical areas; essential characteristics of terrestrial biomes, Atlantic and Mediterranean altitudinal stages; main factors of distribution of the terrestrial life, main biogeographical approaches, and so on.

3. To learn, through the preparation of a herbarium, image analysis and field observation, to recognize the Phytogeography's subjects (flora and vegetation) and to extend this knowledge independently.

4. To learn to analyze current continental distribution of life (using examples of the surrounding landscape) and to deduce the mesologic factors determining their distribution.

5. To learn some simple techniques to analyze the evolution of vegetation's distribution and to interpret the results of more complex techniques.

6. To obtain a basic understanding of Zoogeography and Geography of Soils.



7. To appreciate the biotic world complexity, their internal interactions and those with the abiotic world.
8. To know some of the possible applications of biogeographical knowledge.

DESCRIPTION OF CONTENTS

1. Biogeographical concepts and major scientific approaches.

- a) Courses presentation. What is Biogeography?
- b) Key figures and milestones in the progress of Biogeography.

2. Living beings and their classification.

- a) What is a living being? Classification of living beings.

Exercise 1: Identify and characterize the main parts of a Spermatophyte.

Practice 1: Classification of plants and confection of a herbarium. (Optional group work - individual delivery of a herbarium = 1 per student)

3. The Corology

- a) Floristic and cartographic documentation. Ranges and types. Centre of origin / periphery. Speciation and types.

Exercise 2: Analysis of different forms of ranges representation.

- b) Floristic organization of Earth's vegetation. Floristic contrast. Floristic gradient. Biodiversity. Earths Floristic Kingdoms. Floristic Regions of the Holarctic Kingdom.

4. Ecological factors of distribution of Earths life.

- a) Abiotic external factors: climate (radiation and light, temperature, humidity and wind). Biomes.

Practice 2: Methods of analysis of vegetation distribution depending on substrate and topography. Plants inventory MIFyC (Gentry) and data processing.

Fieldwork 1: La Vallesa. Implementation of an inventory method (group)

Fieldwork 2: From the Valencian coast to the Peñarroya. (group)

- b) Abiotic external factors: the substrate.

- c) Abiotic external factors: the topography (altitude, exposure, slope). The toposequence.

Practice 3: Analysis of vegetation distribution depending on climate. Altitudinal stages.

- d) Biotic factors. Competition. Dependence. Spread capacity.

5. The Phytogeography

- a) The phytosociological method. Characteristic species, differential species and companion species. Inventory. Syntaxonomy. Criticism of the method. Map of vegetation series in Spain.

- b) The physiognomic-ecological approach. Formations types. Classification. Europes vegetation map.

- c) Dynamics of vegetation. The plant succession and study methods. Actual and potential vegetation. The Palaeobiogeography.

**6. Fundamentals of Zoogeography and Soil Geography.**

- a) Fundamentals of Zoogeography. Methodologies for species recognition.
- b) Concepts of Soil Science. Soil formation. Soil components and soil properties.

WORKLOAD

ACTIVITY	Hours	% To be attended
Theory classes	30,00	100
Other activities	15,00	100
Classroom practices	15,00	100
Attendance at events and external activities	14,00	0
Development of group work	10,00	0
Development of individual work	10,00	0
Study and independent work	10,00	0
Readings supplementary material	10,00	0
Preparation of evaluation activities	15,00	0
Preparing lectures	15,00	0
Resolution of case studies	6,00	0
TOTAL	150,00	

TEACHING METHODOLOGY

Teaching methodology combines theory, practice and fieldwork. Theoretic subjects are to be prepared by students, following professor's guidelines and literature. Practical work consists in short extension exercises, and two more extensive works, about the characterization of a forest structure and about the ecological factors affecting altitudinal distribution of vegetation. This more important works are to be performed in teams during practical classes, fieldwork and homework. Furthermore, students will be guided in plant classification and in the drawing up of a virtual herbarium.

CLASSES: The thread of the biogeographical subjects and the most complex biogeographical issues will be explained in lectures. Study material, literature and sources will be also indicated. The student will be provided with a dossier for drills and exercises. Practical work will be explained in practical classes, where also teamwork will be supervise and results will be discussed.

ACTIVITIES OUT OF CLASSROOM: Fieldwork. See Annex to the Guide.

TEAMWORK See Annex to the Guide. Teamwork is recommended for the drawing up of a virtual herbarium, although each student will present his or her individual herbarium. Extensive works and corresponding reports will both be done in small teams.



TUTORIALS: Students will have at their disposal weekly mandatory hours of tutorials and also virtual access to the professor.

EVALUATION

It will combine continuous assessment (participation in class, exercises), assesment of practical work and a final exam.

1. Continuous assessment (exercises and participation) 10% of the qualification.
2. Practice: 25% of the qualification.
3. Final exam: 65% of the qualification.

Delivery of the properly prepared exercises and works is prerequisite to pass the course.

REFERENCES

Basic

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- STRAHLER, A. & STRAHLER, A. (1989) Geografía Física, Barcelona, Omega, 550 pp.
- ZUNINO, M. y ZULLINI, A. (2003) Biogeografía. La dimensión espacial de la evolución. Fondo de Cultura Económica. Mexico.



Additional

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- BEIERKUHNLEIN, C. (2007) Biogeographie, Stuttgart, Ulmer UTB, 397 pp
- COMISIÓN DE SUPERVIVENCIA DE ESPECIES DE LA UICN (1994) Categorías de las Listas Rojas de la UICN. Gland, Consejo de la UICN, 22 p. (red)
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