COURSE DATA

DATA SUBJECT

Code: 33802
Name: Cartography I
Cycle: Undergraduate Studies
ECTS Credits: 6
Academic year: 2026-27

STUDY (S)

Degree	Center	Acad. year	Period
1318 - Degree in Geography and the Environment	Facultat de Geografia i Història	1	First quarter

SUBJECT-MATTER

Degree	Subject-matter	Character
1318 - Degree in Geography and the Environment	Geography II	BASIC

COORDINATION

RUESCAS ORIENT ANA BELEN

SUMMARY

Cartography is a first cycle subject of the studies in Bachelor in Geography and Environment. It is a basic instrumental and practical subject. The teaching load is 6 credits, 4.5 of them theoretical and 1.5 practical and taught in the first semester, first grade year. This module's main objective is to introduce students to the analysis interpretation of maps as a source of data and basic tool for understanding and analysis of the territory. Maps ar fundamental tool for the geographer, information source, an analytical and graphical means of expression geographic information.

This course will lay the foundations for instrumental analysis of spatial distribution of physical and hur geographical facts.

PREVIOUS KNOWLEDGE

RELATIONSHIP TO OTHER SUBJECTS OF THE SAME DEGREE

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

OTHER REQUIREMENTS

Those to study the Bachelor of Geography and Environment.

COMPETENCES / LEARNING OUTCOMES

1318 - Degree in Geography and the Environment

Be able to learn independently and show creativity, initiative and entrepreneurship. Be able to resolve unforeseen situations.

Be able to use cartography and geographic information systems.

Be able to work independently.

Be able to work in interdisciplinary teams.

Have capacity for analysis and synthesis.

Have computer skills related to the field of study.

Have oral and written communication skills in one's own language and in a foreign language.

Learn about human, economic and social geography.

Learn about physical geography.

Learn about regional geographical spaces.

Show commitment to the values of gender equality, interculturality, equal opportunities, universal access for people with disabilities, the culture of peace, democratic values and solidarity.

Show motivation for quality, responsibility and intellectual honesty.

DESCRIPTION OF CONTENTS

1.

1. Cartography and the map.

¿ Introduction to the History of Cartography as a science.

¿ Technological advances throughout history that have affected the understanding of the world and its representation on maps.

¿ From reality to the map: Concept of scale, variations of scale.

2. Shape and dimensions of the Earth. Geographical coordinates.

¿ Shapes and dimensions of the Earth: from the globe to the geoid via the ellipsoid.

¿ Geographical coordinate system: latitude and longitude.

¿ Orthographic coordinate systems

¿ Directions and orientations

3. Projection systems. The U.T.M. projection.

¿ From the Globe to Map: bases of projection systems and ways of classifying projections.

¿ No projection is perfect: distortions of reality in projections onto the plane.

¿ The Universal Transverse Mercator projection: why is it the most widely used in Europe?

4.The topographic map. Representation of relief. Scale and measurements

¿ Explanation of the topographic map in the UTM system. Differences in the representation of the terrain according to scale.

¿ General reading and interpretation of the topographic map

¿ Calculations and measurements: Distances, topographic profiles and longitudinal profiles, calculations of slopes and areas on the map.

¿ Representation of the relief on topographic maps

5. Aerial photography

¿ Basics of aerial photography: basic concepts, types of aerial photography, scale, distortions, stereoscopic vision.

¿ Introduction to photogrammetry: calculation of slopes and areas on the map.

Brief introduction to spatial remote sensing systems

2.

3.

4.

5.

WORKLOAD

PRESENCIAL ACTIVITIES

Activity	Hours
Theory	30,00
Other activities	15,00
Computer classroom practice	15,00
Total hours	**60,00**

NON PRESENCIAL ACTIVITIES

Activity	Hours
Attendance at other activities	7,00
Individual or group project	0,00
Independent study and work	8,00
Preparation of lessons	45,00
Preparation for assessment activities	25,00
Resolution of case studies	5,00
Total hours	**90,00**

TEACHING METHODOLOGY

METODOLOGIA DOCENT

The teaching of the contents of the subject of Cartography is based on the following aspects:

1) In the theoretical part, the teacher will explain the basic contents of the subject, structured in the topics/subtopics outlined in the syllabus of theoretical classes, throughout the course, with 2 weekly sessions of one hour duration. In addition, and with the aim of gradually reinforcing and consolidating the learning of the basic contents of the subject, students will be referred to the reading and study of the basic questions in the reference bibliography.

2) The practical part will be taught in sessions of one hour per week. In these sessions, the teacher will explain techniques, methods and how to carry out the exercises linked to the subject of the theory.

3) There are a series of complementary activities, some of them to be carried out in the cartotheque of the Faculty of Geography and History, which will count towards the mark for attendance and completion of the associated exercises within the continuous evaluation part.

EVALUATION

Continuous assessment/evaluation will be combined with the final exam as follows:

- Continuous assessment: class attendance, work during practical classes, attendance to complementary activities: 15%.

- Evaluation of the practical part: 25%.

- Evaluation of a final exam: 60%.

Only by passing the final exam will the marks of the continuous assessment be averaged.

In the second examination session, the theoretical and practical criteria will be assessed in the same way as in the first.

REFERENCES

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URTEAGA, L. y NADAL, F. (2001), Las series del mapa topográfico de España a escala 1/50.000.

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