COURSE DATA

DATA SUBJECT

Code: 33803
Name: Cartography II
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	2	First quarter

SUBJECT-MATTER

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

COORDINATION

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SUMMARY

The subject "Cartography II" focuses on the theoretical study and practical creation of all types of thematic maps. The objective of this subject is for the student to learn to interpret and create the most common types of thematic maps using computer tools. To this end, it is necessary for the student to learn to: define the objective of the map or chart to be created; properly select and process the information; select the most appropriate visual variables and type of graphic representation; correctly use computer tools to achieve the desired result; utilize critical thinking to detect errors and manipulations in their own cartography or in pre-existing maps.

PREVIOUS KNOWLEDGE

RELATIONSHIP TO OTHER SUBJECTS OF THE SAME DEGREE

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

OTHER REQUIREMENTS

The course Cartografia I should be passed. Having some skills on using computer programs.

COMPETENCES / LEARNING OUTCOMES

1318 - Degree in Geography and the Environment

Capacidad de trabajo en equipos de carácter interdisciplinar.

Capacidad de trabajo individual.

Comunicación oral y escrita en la lengua propia y conocimiento de una lengua extranjera.

Conocimientos de informática relativos al ámbito de estudio.

Elaborar e interpretar información estadística. Manejo de programas estadísticos.

Habilidades de investigación.

Manejo de la cartografía y los sistemas de información geográfica.

Métodos de información geográfica.

Motivación por la calidad en el trabajo, responsabilidad, honestidad intelectual.

Relación y síntesis información territorial transversal.

Técnicas de información geográfica como instrumento de conocimiento e interpretación del territorio y del medio ambiente.

DESCRIPTION OF CONTENTS

1. Introduction. Base map and layer management for cartography creation

Key concepts of cartography, such as scale, which students should already be familiar with from previous courses, will be reviewed. The use of the base map and how geographic information is managed and organized in layers for cartography creation will be explained.

2. Concept of thematic cartography

The concept of thematic cartography and its main applications in Geography and other sciences will be established. Different types of geographic information and their use in cartography will be identified and characterized.

The main programs for cartography creation and editing will be explained, with a special emphasis on

3. Software tools and sources for thematic cartography creation

Geographic Information Systems (GIS). Students will be introduced to the main sources of geographic information for cartography: Spatial Data Infrastructures (SDIs) and Open Data.

4. Graphic semiology

Cartographic language aims to enhance the expressiveness of the graphic characteristics of map elements to optimize the visualization process, transferring information from the map to its user. This is achieved through a series of visual variables that the cartographer can modify to make distinctions.

5. Cartographic editing and map labeling

Although software tools allow for relatively easy cartographic outputs, it is necessary to improve and adapt this primary information. Students need to know basic rules such as map labeling and titling.

6. Types of maps

Maps can consist of points, lines, or surfaces. From these elements, different types of thematic maps can be defined, such as choropleth maps, proportional symbol maps, cartograms, flow maps, isolines maps, and qualitative maps.

7. Aerial photography and photointerpretation

For over 100 years, aerial photos have been a primary source for cartography creation. Photointerpretation is the technique that, through visual analysis of images, allows for the extraction of thematic information. The main properties of aerial photography (types, scale, displacement, deformation, and parallax) and georeferencing tools will be covered. The main photointerpretation criteria (tone, texture, spatial situation, etc.) will also be established.

8. Specialized thematic cartography: Land use maps

Land use cartography is highly useful for territorial planning and environmental analysis. The characteristics of the main land use cartographic databases, their creation process, and applications will be covered.

9. Introduction to online cartography tools

In recent years, various online tools have emerged that allow for the creation or editing of cartography without the need to manage databases or locally installed programs. The advantages, disadvantages, and applications of the main available tools of this type will be discussed.

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	0,00
Individual or group project	30,00
Independent study and work	30,00
Preparation of lessons	30,00
Preparation for assessment activities	0,00
Resolution of case studies	0,00
Total hours	**90,00**

TEACHING METHODOLOGY

Theoretical lectures will be held during the first days of the course. Practical lectures will be held during the middle and end of the course and will include preparation of thematic maps using ArcGIS software. Exercises, whose completion can be done outside of class, will be made whenever possible in coordination with other courses. These exercises, along with their interpretation (comment) must be included in a practical notebook that will be an essential part of the evaluation.

EVALUATION

The evaluation system will not reside solely in the assessment of the exam tests, but I will constitute a continuous procedure throughout the semester. The final qualification will combine the evaluation of the supervised work ¿ which includes exercises and course practices ¿ and the results of the complementary activities, which include seminars, field trips, conferences, written tests or exams, and others.

The evaluation will be adjusted to these percentages:

Theoretical and practical exam: 60%

Practical work: 30%

Complementary activities: 10%

The second call will evaluate the theoretical and practical criteria of the subject in the same way as in the first call.

Qualification system will held de Normative of the Universitat de València, approved by Consell de Govern 27th January of 2004. (RR.DD. 1044/2003 and 1125/2003)

REFERENCES

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