

Introduction to Cartography

Code: 104235
ECTS Credits: 6

Degree	Type	Year	Semester
2503710 Geography, Environmental Management and Spatial Planning	FB	1	1

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Use of Languages

Principal working language: catalan (cat)
Some groups entirely in English: No
Some groups entirely in Catalan: Yes
Some groups entirely in Spanish: No

Other comments on languages

Although mostly the usual language is usually Catalan, it will ultimately depend on the entity where practices are made that the most commonly used language is this or Spanish

Teachers

Anna Badia Perpinya
Alaitz Zabala Torres

Prerequisites

Without prerequisites.

Objectives and Contextualisation

The aim of the course is to provide sufficient tools for students to know how to produce maps and at the same time be able to understand them and also decide which map and which variables to include depending on the type of geographical information they need to represent.

The fundamental activity that will be required to the students is the observation of cartographic materials, their understanding and elaboration in accordance with the following guidelines:

- as a material that facilitates the reconstruction of the current and past landscape,
- as an evidence of social organization and of human life,
- as an illustration of the knowledge of the Earth, and
- as a product of methods and techniques of representation of geographical distributions of all kinds

Cartographic documents and images are of almost unavoidable use in today's geographical studies; they allow us to know the absolute location of geographical objects, that is, to know where they are on Earth; however, there is an even more specific field of study: the description and explanation of the relative location, or actual geographical distribution of those geographic objects. It is necessary to know how to draw conclusions of benefit to society and maps and images are essential both for analysis and for the presentation of research results. Any type of study of territorial planning or that has to do with the environment, to name a well-known

sample of professional activity related to the degree, involves the analysis and interpretation of image documents (aerial photographs, images of satellite, etc.) and the creation of specific topographic and thematic maps.

The aim of the course is, therefore, to provide the basic and essential knowledge in both documentary aspects, maps and images, and in all its possible extension. This means that the course offers a general overview rather than an in-depth look at a particular aspect. In this sense, at the end of the course, the student will be asked to decide what types of documents will need to be analyzed and carried out, in the context of a specific geographical study. In short, nothing more and nothing less than what needs to be done in a first year. It will be later, in other subjects of the Degree, when there will be the opportunity, and the obligation, to deepen the basic knowledge acquired in this subject, especially in the most technical and methodological aspects.

Finally, there are a few basic concepts that must be mastered at the end of the course, such as: "map", "scale", "coordinates", "symbolization" and "data sources". Other more specific ones that will be seen as the subject develops are later derived from these.

Competences

- Combine distinct techniques and methods of representation and spatial analysis in elaborating materials for transmitting results.
- Draw up action and intervention plans in the territory which respond to sociodemographic and environmental problems.
- Systematically analyse and interpret environmental, demographic, urban and landscape elements.

Learning Outcomes

1. Combine distinct techniques and methods of representation and spatial analysis in elaborating materials for transmitting results.
2. Demonstrate geographical problems in cartographic information.
3. Identify the best way to show information in maps.
4. Summarise geographical information in basic cartographic products.

Content

A. INTRODUCTION.

1. Geographic documentation.

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Basic typology: maps and images.

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The characteristics of the maps.

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The contour lines: the implantation of the relief.

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The basic topographic map.

B. THE PROPERTIES OF THE IMPLANTATIONS

2. The properties of the implantations: the dimensions.

- The scale: definitions and utility.
- The expression of the scale.
- Scale changes.

- A classification of scales by magnitude.

3. The properties of the implantations: the absolute location.

- The position in the territory.
- The basic concepts.
- Idea of cartographic projection.
- The geographic coordinate system.
- The Universal Transversal Mercator UTM coordinate system.

C. ATTRIBUTES SYMBOLOGY.

4. The application of visual variables.

- The analysis of the attributes of cartographic objects.
- Visual variables for quantitative attributes.
- Visual variables for qualitative attributes.

5. Cartographic expression

- Maps production.
- Maps layout.

Methodology

The methodology of the subject is guided by the following types of activities:

- First of all, through the directed activities, that is to say, face-to-face sessions of explanation of the syllabus and revision in the classroom of the exercises carried out throughout the course
- Secondly, with supervised activities, that is to say, by means of the revision and the study of the solutions of the proposed exercises which will be available in the virtual campus of the course, as well as the tutorials that will be carried out for the development of the project of course (see section of the evaluation).
- Thirdly, with autonomous activities, that is, everything that should be done on behalf of the student for the preparation of the course. This includes the consultation of various material (articles, examples of cartographic documents, etc.) available in the virtual campus, as well as specialized bibliography, both the most general and the one that is incidentally cited. It is worth noting that it should be clear from the outset that, as can be seen, teachers do not "follow" any specific mapping manual despite the existence of several excellent ones on the market.
- Finally, and fourthly, with evaluation activities (which are specified in the corresponding section).

On the other hand, it is planned to allocate approximately 15 minutes of some class (basically towards the end of the semester) to allow students to answer the survey of evaluation of teaching performance (teachers) and evaluation of the subject.

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Theory + exercises	47	1.88	1, 3
Type: Supervised			

Tutorships	25	1	2
Type: Autonomous			
Study	75	3	4

Assessment

The evaluation of the course is continuous and the knowledge will be evaluated using the following criteria:

- 2 exams that will be done in the usual schedule of class sessions (therefore, it will be necessary to provide an approximate duration of 1:20). These tests will consist of exercises in the style of those proposed during the course and in some cases, will also include questions of argumentation or reasoning of the answers. In no case will definitions or developments of topics be requested. The weight of each test will be 20%. Total: 40%.
- Project + tutorials to be done throughout the semester, sometimes during teaching hours (e.g. tutorials) and others outside of it (e.g. we also need to think about the possibility of doing *online* tutorials). The project to be developed will be related to the fieldwork trip of a few days that is usually organized in the course of "Fundamentals of Physical Geography" (1st year and scheduled in the 2nd semester). Its completion is as a couple. The total weight of this part will be 20%.
- Practices that will be done in the usual schedule of the class sessions. 6 are planned and the weight of each will be 5%. Their completion is individual. Total: 30%
- Attendance and active participation will be equivalent to 10% of the final grade, as long as a minimum of 80% of the class sessions are attended. Justified absences (for medical reasons, family force majeure, strikes on public transport, etc.) will not be "penalized". Remember that the subject is PRESENTIAL.
- On carrying out each evaluation activity, lecturers will inform students (on Moodle) of the procedures to be followed for reviewing all grades awarded, and the date on which such a review will take place.

In addition, the following aspects must be taken into account:

- As for the exams, the students will have to pass both; However, if one does not pass, one can only count towards the final grade for the course if the grade obtained does not fall below 40% of the maximum mark provided. In the case of not reaching this threshold, then you will have to recover it.
- As for the practices, their completion is optional and the student can decide how many they will end up doing (none, all 6 or few). Of course, they should also be aware that that undelivered practice does not add up to the overall grade of the course and that it will not be possible to submit them later. In other words, the practices are done and submitted during the semester, not at the end of it.
- As for the project, its completion is mandatory (also the tutorialship derived from it) and the grade obtained will be incorporated into the final grade for the course.
- The student will receive the grade of "Not assessable" / "Not submitted" as long as he / she has not submitted more than 25% of the assessment activities.
- Those evaluation acts in which there have been irregularities are not recoverable.

Regarding the revaluation:

- To participate in the revaluation, students must have previously been assessed in a set of activities whose weight is equivalent to a minimum of 2/3 of the total grade.
- The part of the exams may be re-evaluated, the student will have to take the failed exams, be it only one or both; the remaining notes will be saved for the final grade.
- Neither the practices nor the project can be reassessed because in fact they are not suspended either, the grades obtained will be incorporated into the total grade. Nor can the assistance be recovered (which cannot be compensated with any other note).

ATTENTION (1): with regard to PLAGIARISM, the student must know that in case of committing any irregularity that could lead to a significant variation of the qualification of an act of evaluation, this act of evaluation will be qualified with 0, regardless of the disciplinary process that may be instructed. In the event of several irregularities in the evaluation acts of the same course, the final grade for this course will be 0.

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Attendance	10	0	0	1, 3, 2, 4
Exams (2)	40%	3	0.12	1, 3, 2, 4
Project + tutorship	20%	0	0	1, 3, 4
Submit of practices	30%	0	0	3, 2, 4

Bibliography

We must insist that the bibliographic readings are not of primary interest in this subject. Therefore, the list of books that follows is only a reminder of the works, and in this case the most general, in which the contents presented in the web of the materials of the subject can be reinforced.

- Barber, Peter (2005): *El gran libro de los mapas*. Barcelona: Paidós.
- Bosque Sendra, Joaquín i García, Rosa C. (2000): "El uso de los sistemas de información geográfica en la planificación territorial", *Anales de Geografía de la Universidad Complutense*, #20, pp. 49-67 (<https://revistas.ucm.es/index.php/AGUC/article/view/AGUC0000110049A/31281>).
- Clark, John O. E. (ed.) (2006): *Joyas de la Cartografía. 100 ejemplos de cómo la cartografía definió, modificó y aprehendió el mundo*. Londres: The Chrysalis Building.
- Dent, John B. (1996): *Cartography: thematic map design*. Dubuque IA: Wm C Brown Publishers, 4a ed.
- Desclaux-Salachas, Jasmine (2017): *The Art of Cartographics: Designing the Modern*. Londres: Goodman Books.
- Gutiérrez, Javier i Gould, Michael (1994): *SIG: sistemas de información geográfica*. Madrid: Síntesis.
- Monmonier, Mark (2018): *How to lie with maps* (3ª edición). Chicago: University of Chicago Press.
- Oyala, Víctor (2011): *Sistemas de Información Geográfica* (https://wiki.osgeo.org/wiki/Libro_SIG).
- Rabella, Josep Ma. (1986): "La proyección cartográfica de Arno Peters: valoración cartográfica y valoración didáctica", *Didáctica Geográfica*, núm. 14, pp. 117-124.
- Robinson, Arthur H. et al. (1987): *Elementos de cartografía*. Omega. Barcelona.
- Vázquez, Francisco i Martín, José (1989): *Lectura de mapas*. Madrid: Instituto Geográfico Nacional.

Links:

- *Revista Catalana de Geografia*(Institut Cartogràfic i Geològic de Catalunya) --> <http://www.rcg.cat/hemeroteca.php>
- *Mappemonde* --> <http://mappemonde.mgm.fr/>
- *Geofocus. Revista Internacional de Ciencia y Tecnología de la Información Geográfica* --> <https://www.geofocus.org/index.php/geofocus>
- *The Cartographic Journal* --> <https://www.tandfonline.com/toc/ycaj20/current>

Software

It would be good for the student to have a basic user level of commonly used program such as word processor, spreadsheets, presentations, etc. The subject will also use specific software for Geographic Information Systems (GIS): ArcMap, MiraMon and / or QGIS.