



Universitat de Lleida

DEGREE CURRICULUM  
**INTRODUCTION TO THE  
CARTOGRAPHY**

Coordination: BURGUEÑO RIVERO, JESUS

Academic year 2022-23

## Subject's general information

<b>Subject name</b>	INTRODUCTION TO THE CARTOGRAPHY			
<b>Code</b>	101150			
<b>Semester</b>	1st Q(SEMESTER) CONTINUED EVALUATION			
<b>Typology</b>	<b>Degree</b>	<b>Course</b>	<b>Character</b>	<b>Modality</b>
	Bachelor's Degree in Geography	1	COMMON/CORE	Attendance-based
	Double degree: Bachelor's degree in Geography and Bachelor's degree i Tourism	1	COMMON/CORE	Attendance-based
<b>Course number of credits (ECTS)</b>	6			
<b>Type of activity, credits, and groups</b>	<b>Activity type</b>	PRALAB		TEORIA
	<b>Number of credits</b>	2		4
	<b>Number of groups</b>	1		1
<b>Coordination</b>	BURGUEÑO RIVERO, JESUS			
<b>Department</b>	GEOGRAPHY AND SOCIOLOGY			
<b>Teaching load distribution between lectures and independent student work</b>	60 hours of class and 90 hours of autonomous work			
<b>Important information on data processing</b>	Consult <a href="#">this link</a> for more information.			
<b>Language</b>	Catalan			

Teaching staff	E-mail addresses	Credits taught by teacher	Office and hour of attention
BURGUEÑO RIVERO, JESUS	jesus.burgue@udl.cat	6	Monday and Tuesday 13 - 13:30 h Office 3.40

## Subject's extra information

- Reading of topographic maps, cartographic language and thematic maps.

This course pretends for the student to acquire the knowledge on the specific and characteristic language of the geographers (the maps) and the different possibilities of graphic expression of reality in the context of social sciences. The techniques that are subject of study in this course are mainly cartographic. The students will pursue the learning on how to read, interpret and take full advantage of all kind of topographic maps, themed maps, aerial photographs and satellite images along with the graphic language in general. At the same time, they will pursue the acquisition of the needed abilities to draw maps and graphics derived from statistical and topographic information. There will also be teaching of the basic mathematic knowledge needed for exploitation of the topographic informations along with the acquisition of the needed abilities for the computer drawing of simple thematic maps and the familiarization of the drawing tools and computer graphic representation. Furthermore, there is an intension to focus on the evaluation of a map as a cultural product of first order and as an efficient communication and expression channel of the geographic information. The critical spirit will be encouraged in the reading of maps: demythologizing, critique and evaluation of the iconic force in the transmission of ideas.

## Learning objectives

Learning outcomes:

- Familiarity with vocabulary and common concepts in the use of maps
- Reading, understanding and use of information from topographic maps
- Familiarity with cartographic resources available online
- Knowledge of cartographic conventions and traditions
- Knowledge of the main landmarks of the evolution of cartography (in particular the Spanish)
- Ability to choose the most appropriate form of expression from a wide range of graphic resources
- Diversify expressive resources
- Identification and critical assessment of cartographic projections
- Ability to obtain the maximum information of topographical cartography
- Use of thematic mapping programs, both commercial and online
- Versatility and adaptability in the use of new cartographic technologies

## Competences

- CG3 Characterize the spatial diversity of the territories
  - CE1 Manage and use the methods and techniques of analysis and interpretation of statistical sources
  - CE2 Know the fundamentals and the specific scientific terminology of each branch of Geography
  - CE3 Express geographical knowledge through thematic cartography
  - CE4 Handle topographic cartography information
  - CE5 Learn how to extract geographic information from existing internet resources
  - CE13 Acquire the habits of analysis of geographical data in order to proceed to their orderly and reasoned presentation, either by means of an oral presentation or a written report
  - CT2 Acquire a significant command of a foreign language, especially English
  - CT3 Acquire training in the use of new technologies and information and communication technologies

## Subject contents

### THEORETICAL TOPICS

- 1.- Introduction. UTM Coordinates
- 2.- Scale (numerical and graphical, old units, scale and surface, surface measure)
- 3.- The representation of the relief. Level and equidistance curves. Divisorias or ridge lines. Shading, hypsometric inks, hachures ...
- 4.- Distance (real, reduced, measured)
- 5.- Orientation (in the field, North types, declination and convergence)
  
- 6.- Pending and intervisibility
- 7.- Notions of geodesy (ellipsoid, geodetic network). Geographical coordinates
- 8.- Projections (mathematical qualities). Azimutal projections. Cylindrical projections. UTM. Conical projections. Special projections

### PRACTICAL AGENDA

- 1.- Golden Surfer program (v.13): hypsometric maps, three-dimensional representation of an MDE, topographic profile, watershed, shading, visibility,
- 2.- Golden MapViewer program (v.8): digitization and thematic maps: choropleths, bar graphs and divided circles, isopleths, graduated symbols.

## Methodology

Teaching methodologies:

- 1.- Lectures.
- 9.- Troubleshooting.
- 10.- Making learning folder.
- 11.- Elaboration of projects.
- 15.- Practices

The student has a theoretical dossier and a complementary dossier (of texts and figures), as well as detailed instructions of the practices with the cartographics programs.

## Development plan

Alternation of lectures and practical classes.

### CALENDAR

1. Introduction. UTM coordinates (2 weeks).
- 2.- The scale (2 weeks).
- 3.- Representation of relief (2 weeks).
- 4.- Distance (2 weeks).
- 5.- Orientation (1 week).
- 6.- Slope and intervisibility (2 weeks).
- 7.- Notions of Geodesy (1 week).

8.- Projections (3 weeks).

## CALENDAR OF PRACTICES

1.- Surfer (8 weeks)

2.- MapViewer (5 weeks)

Other practices: 3 weeks

## Evaluation

ACTIVITY	% QUALIFICATION
Examination	27
Practice of Surfer	30
Practice of MapViewer	25
Problems and practices of topographic drawing	18

Examination date; 18/01/2023, at 9 h, classroom 3.36

Students who combine their degree with a full time job have the right to ask for alternative assessment within 5 days after the beginning of the semester. For information, please send an e-mail to [academic@lletres.udl.cat](mailto:academic@lletres.udl.cat) or ask for information at the Faculty's secretary (Secretaria de la Facultat de Lletres).

## Bibliography

Basic documentation: pdf files with the development of the syllabus and material of support that, as a manual of the subject, the teacher will facilitate to the students in the virtual campus (sakai / recursos)

Basic bibliography:

Of a general nature:

MARTÍN LÓPEZ, J. (1999): **Cartografía**, Colegio oficial ingenieros técnicos en topografía.

RABELLA, Josep M. (2011): **Diccionari terminològic de cartografia**, ICC, Barcelona.

RAISZ, Erwin (1974): **Cartografía**, Omega, Barcelona.

ROBINSON, A. - SALE, R. - MORRISON, J. - MUEHRCKE, P. (1987): **Elementos de cartografía**, Omega.

VÁZQUEZ MAURE, F. - MARTÍN LÓPEZ, J. (1987): **Lectura de mapas**, Instituto Geográfico Nacional.

for the first items

PANAREDA i CLOPÉS, Josep M. (1984): **Cómo interpretar el mapa topográfico**, Anaya, Madrid.

PUYOL, R. - J. ESTÉBANEZ (1976): **Análisis e interpretación del mapa topográfico**, Tebar, Madrid.

THROWER, Norman J.W. (2002): **Mapas y civilización. Historia de la cartografía en su contexto cultural y**

**social**, Serbal, Barcelona.

- for the final items

IBÁÑEZ, Raúl (2011): ***El sueño del mapa perfecto. Cartografía y matemáticas***. Madrid, RBA Libros.

STRAHLER, A.N. (1974): ***Geografía física***, Omega, Barcelona. (primers capítols)

RAISZ, Erwin (1953): ***Cartografía***, Omega, Barcelona.