Universitat Autònoma de Barcelona

2022/2023

Techniques of Regional Representation and Design

Code: 104258
ECTS Credits: 6

Degree	Type	Year	Semester
2503710 Geography, Environmental Management and Spatial Planning	OB	3	2

Contact

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Use of Languages

Principal working language: spanish (spa)
Some groups entirely in English: No
Some groups entirely in Catalan: No
Some groups entirely in Spanish: Yes

Other comments on languages

Students will be able choose the language (Catalan and Spanish) than they will use in the classroom and in the reports and examns.

Prerequisites

There are no prerequisites established for this course

Objectives and Contextualisation

The aim of the subject is to reach solid theoretical and methodological knowledge about the graphic representation of geographical information. This subject is an introduction to the domain of data visualization through the employment of open source and propietary softwares. The objective is not to learn about specific softwares, but to understand the fundamental issues in relation to the design of geographical information and the treatment of data. At the end of the course, the student will be able to apply the gathered knowledge not only to future subjects, but also to projects related to the labor market.

Competences

- Apply methods and techniques of quantitative, qualitative and field work analysis in the interpretation of territorial and environmental processes.
- Combine distinct techniques and methods of representation and spatial analysis in elaborating materials for transmitting results.
- Explain and represent territorial processes using statistical techniques, and graphic, cartographic and geographical information representations.
- Generate innovative and competitive proposals in professional activity.
- Students must have and understand knowledge of an area of study built on the basis of general secondary education, and while it relies on some advanced textbooks it also includes some aspects coming from the forefront of its field of study.

Learning Outcomes

1. Combine distinct techniques and methods of representation and spatial analysis in elaborating materials for transmitting results.
2. Generate innovative and competitive proposals in professional activity.
3. Interpret the statistical result of data analysis.
4. Students must have and understand knowledge of an area of study built on the basis of general secondary education, and while it relies on some advanced textbooks it also includes some aspects coming from the forefront of its field of study.
5. Understand techniques for cartographic and infographic representations of data and regional processes.
6. Understand the main sources of information and scientific documentation related to regional and environmental processes.

Content

1. Basic concepts of composition and design.

2. Composition and cartographic design.

3. Composition and design of statistical information.

4. Composition and design of infographics and posters and others publications.

Methodology

The course comprises three types of evaluable activities (autonomous, directed and supervised). During the course, the student will acquire knowledge and skills with the support of the teaching staff.

The autonomous activities include the realization of practices with specific software.

The directed activities include theoretical and practical classes developed in the classroom.

The supervised activities involve the elaboration of a project supervised by the teachers.

Autonomous

Realization of practices using specific software and recommended bibliography.

Directed

Theory classes

Supervised

Project supervised by professors

In the event that the classes cannot be done in person, the format will be adapted (maintaining the weighting) to the possibilities offered by the UAB virtual tools. Homeworks, activities and class participation will be done through forums, wikis and / or exercise discussions through Teams, etc. The professors will ensure that the student can access or offer alternative and available means.

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			
Lectures	48.5	1.94	6, 5, 3
Type: Supervised			
Project supervised by professors	65	2.6	6, 2, 4
Type: Autonomous			
Carrying out practices using specific programs and recommended bibliography	35	1.4	6, 5, 3, 4

Assessment

The subject will be evaluated according to the following evaluation evidence:

- Practical exercises that will be delivered throughout the course, being 25% of the total of the final mark. The internships will be delivered within the deadline set by the teachers. Late delivery will result in a penalty to be considered.

- Project, which will make up 35% of the final grade.

- Exams, which will make up 40% of the final grade. There will be two midterm exams. The final mark of the exam will be the average of the two partial exams.

The evaluation of the subject will be continuous. To pass the subject it is essential:

a) A minimum of 5 points (out of 10) on average in the two partial tests.

b) A minimum of 5 points (out of 10) in the group work.

c) A minimum of 5 points (out of 10) in the average of exercises in the classroom.

Students who do not take the final project or do not take the exam will be assessed as "Non-Assessable".

In the event that the student commits any irregularity that may lead to a significant variation in the grade of an assessment act, this assessment act will be graded with 0, regardless of the disciplinary process that may be instructed. In the event of several irregularities in the evaluation acts of the same subject, the final grade for this subject will be 0.

Those evaluation acts in which there have been irregularities are not recoverable.

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

RECOVERY

To participate in the recovery students must have been previously assessed in a set of activities whose weight is equivalent to a minimum of two thirds of the total grade of the subject.

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Exam	40%	1.5	0.06	6, 5, 2, 3
Final project	35%	0	0	1, 6, 5, 2, 3

Practical exercises	25%	0	0	6, 5, 2, 3, 4

Bibliography

Alcalde, I. (2015). *Visualización de la información: de los datos al conocimiento*. Editorial UOC.

Brewer, C. (2005). *Designing better maps: a guide for GIS users*. ESRI Press.

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Blog web CAIRO, A. http://www.thefunctionalart.com/

Edward Tufte (1997) Visual Explanations: Images and Quantities, Evidence and Narrative. Cheshire, CT: Graphics Press. ISBN 0961392126.

Cairo, A. (2011). *El Arte funcional: infografía y visualización de información*. Alamut.

Cairo, A. (2019). *How charts lie: getting smarter about visual information*. W.W. Norton & Company.

David, M. (2010). *La Información es bella*. Integral.

Dent, B. D., Torguson, J. S., & Hodler, T. W. (2009). *Cartography: thematic map design*. McGraw-Hill Book.

Few, S. (2012). *Show me the numbers: designing tables and graphs to enlighten*. Calif: Analytics Press.

Kirk, A. (2016). *Data visualisation: a handbook for data driven design*. Sage Publications Ltd.

Levitus, C. C. (2011). *Visualize this: the flowing data guide to design, visualization, and statistics*. IN.

Meirelles, I. (2014). *La Información en el diseño: introducción a las historias, las teorías y las mejores prácticas para la visualización eficaz de información*. Parramon Art & Design.

Rendgen, S. (2014). U*nderstanding the World: the atlas of infographic*. Ed., Julius Wiedemann. Taschen.

Wilke, C. (2019). *Fundamentals of data visualization: a primer on making informative and compelling figures*. O'Reilly Media.

During the course the recommendation of resources such as books, audiovisual resources, etc. will beexpanded.

Software

Along the course, several softwares will be used:

- Geographical Information Systems: ArcGIS, Qgis.
- Office softwares: Powerpoint, Excel.
- Design softwares: GIMP.
- Other online softwares: Canvas, Instamaps, etc.