Universitat Autònoma de Barcelona

2018/2019

Geographical Crime Analysis

Code: 103953
ECTS Credits: 6

Degree	Type	Year	Semester
2500257 Criminology	OB	3	2

Contact

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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

En el caso el curso sea atendido por estudiantes internacionales, que no tengan conocimientos del catalán, la teoría y un seminario se impartirà en castellano.

Teachers

Meritxell Gisbert Traveria

Prerequisites

There are no prerequisites related to this subject, although it will be useful to have computer and statistics skills.

Objectives and Contextualisation

Introduction

The geographic analysis of crime using Geographic Information Systems (GIS) is a well-developed field with a large experience especially in the Anglo-Saxon world and it is currently being highly implemented in Spain. The French and British schools of criminological cartography and the ecological school in Chicago leaded the pioneering contributions regarding the importance of space in the management of crime. They focused on the description of the spatial differences of urban violence and crime. Nowadays, we have a design of models and techniques that would have been unthinkable at the beginning of the twentieth century. In this context, GIS have become the best tool to analyze and model crime. With this tool, we can carry out a spatial analysis of the place where offenders live and see the places where crimes take place by using methods such as hotspots. We can also analyze the isk of crimen in one area, as well as the distribution of the sense of insecurity or the resources to prevent it. The main reason why GIS are used is for their ability to diagnose, not only to plan, but also to acknowledge the causes and why. In this sense, the combination of different spatial, socioeconomic and environmental variables will provide arguments and will be used to support the decision-making process in order to prevent crime and act accordingly.

General Aims

With GIS we can make explicit what is implicit and we can see how crime is distributed and why it is distributed in this way. This subject is an introduction to the spatial analysis of crime. The aim is to provide students with both the theoretical and practical knowledge to use GIS's basic tools. The interest is not to teach how to use GIS software, but to give tools to know what kind of problems GIS can solve.

The main aim is not totrain students in some specific software, but to understand basic aspects regarding the type of geographic information and how to deal with and analyze the data compiled. At the end of this course, students must be able to know how to apply the knowledge skills achieved through the consolidation of both the theoretical and practical aspects developed according to the needs shown in other geographical subjects. This implies not only knowing how to use GIS, but also understanding what we are doing when we are using them, and why they are used.

Specific aims

With this objective, we are planning a double aim associated with the theoretical and practical content of the subject. On the one hand, the conceptual context around GIS and on the other, the total number of abilities that the use of GIS requires. At a general level, students need to know and understand what GIS are, why they are used, how they are used and when they need to be used.

In the conceptual level, the following objectives are developed:

- Providing the basic knowledge to understand and use cartographic representation in the context of criminology.

- Knowing the previous spatial representation of crime and at the same time, understanding the nature of Geographic Information Systems (definition and characteristics).

- Knowing and understanding how the geographic information is introduced, structured and stored, as well as the main functions of GIS manipulation and analysis carried out to solve different questions.

- Knowing and understanding the two data models used to represent reality (vector and raster data models) and the sources of information related with crime.

- Knowing how to apply and interpret the results of the application of spatial analysis tools and assess the possibility to spread them in terms of stigmatization. Publishing a hotspot map would be a good example of this.

In the second case, by gaining the abilities to use GIS, we are not trying to show students the technique as such, but to make them aware of what can be done, how it can be done and where they can apply it. The objectives can be detailed in the following way:

- Understanding and knowing how to use GIS as a tool to obtain answers to certain types of questions.

- Knowing what types of operations are appropriate in each case to solve specific needs.

- Gaining practical experience in solving some specific problems of geographic and land discipline.

Skills

- Ability to analyse and summarise.
- Accessing and interpreting sources of crime data.
- Applying the quantitative and qualitative data collection techniques in the criminological field.
- Clearly explaining and arguing a carried out analysis about a conflict or crime problem and its responses in front of specialised and non-specialised audiences.
- Designing a criminological research and identifying the appropriate methodological strategy to the proposed goals.
- Using research methods in social sciences in order to diagnose criminality problems.
- Verbally transmitting ideas to an audience.
- Working autonomously.

- Working in teams and networking.

Learning outcomes

1. Ability to analyse and summarise.
2. Analysing criminal and control data through tools of geographical information system (GIS).
3. Applying the quantitative and qualitative data collection techniques in the criminological field.
4. Choosing the appropriate research methodology in criminological works.
5. Diagnosing a criminal process through the scientific method.
6. Interpreting in a scientific way statistical data from the criminological field.
7. Transmitting in a reasoned manner the results of a criminological research.
8. Verbally transmitting ideas to an audience.
9. Working autonomously.
10. Working in teams and networking.

Content

1. Environmental Criminology and GIS

- Background: the Chicago school. How Geography can explain the spatial distribution of crime

- GIS: what are they? What is their history? GIS contributions to the spatial distribution of crime

- Cartography and crime maps

2. Geographical information for the spatial analysis of crime

- The thematic, spatial and temporary components of geographic information

- Checking the place and condition. First level of GIS use

3. Georeferencing crime

- Absolute and relative georeferencing

- The value of the georeferenced information. The spatial location of crimes and the relationship with other spatial variables

4. Data models

- Raster model

- Vector model

- Data sources for spatial representation of crime

- Analysis of the design and content of crime WMS

5. Spatial analysis

- Overlay of layers

- Buffer and distance maps

- Density maps: Hotspot

6. The importance of designing the map as a tool to support decision making

- Cartographic symbolization

- Elements in the design of a map

Schedule, sequencing the syllabus and evaluation activities, will be uploaded to the virtual campus at the beginning of the course.

Methodology

The contents of the subject will be developed through the following activities:

- Oral exhibitions.

- Read a paper or a book chapter (individual activity complementary to classroom work).

- Guided teacher-class practices

- Class and / or small group practice sequence.

To follow the course students will ve provided with a specific GIS software: QGIS (free) and ArcGis (commercial).

In this subject it is essential to bring a pen drive for all sessions with at least 2 GB of capacity.

Activities

Title	Hours	ECTS	Learning outcomes
Type: Directed			
Lectures	25	1	2, 3, 7
Type: Supervised			
Seminars	25	1	2, 3, 5, 6
Type: Autonomous			
Individual work, using software and readings.	100	4	2, 3, 5, 6, 1, 10

Evaluation

Items of evaluation

Middle term exams (60%)

Exercises (30%)

Concepts (optional) (10%)

Requirements for being assessed

- Doing 1 exercise for each block. Delivery is mandatory and will not be accepted out of time. Students will only be admitted to the exam once they have delivered the required exercises.

- Doing the middle-term exams

- The degree requires to attend a minimum of 80% to be evaluated. Only absences due to illnees or similar reasons ay be justifiable.

Optional tasks

2 essays with the description of the key concepts of the subject, one to be delivered before the first middle-term exam and the other before the second middle-term exam

Requirements to pass the course

Two requirments: a) to have an average mark of 5/10; b) to have a minimum mark of 4/10 in each exam

Recovery

It will only be possible to reassess if the activity has been submitted. The maxim mark in case of recovery is 5.

Failed exercises may only be recovery when the average mark does not reach 5.

Fraudulent conducts

Studetns that cheat or attempt to cheat in the exam will get a 0, losing the right to a second chance. Plagiarism will conduct to a fail of the essay and, in case of recidivism the student will receive a fail mark.

Other aspects

When 30% of the evaluation activities have been presented, the student is inside of evaluation process.

Evaluation activities

Title	Weighting	Hours	ECTS	Learning outcomes
Concepts	10%	0	0	3, 1, 9
Practical exams	30%	0	0	2, 3, 6, 1, 9
Practical exercices	30%	0	0	2, 3, 5, 4, 6, 7, 8, 9, 10
Theoretical exams	30%	0	0	2, 3, 5, 4, 1, 7, 9

Bibliography

Mandatory readings

Galdon, G., Pybus, M. (2011). Crisis económica y gestión de la inseguridad ciudadana: los mapas de delincuencia. Revista catalana de seguretat pública, 24, 79-105. http://www.raco.cat/index.php/rcsp/article/viewFile/244856/327920.

Oyala, V. (2011). *Sistemas de Información Geográfica*. http://volaya.github.io/libro-sig/. (Parte 1. Fundamentos, Parte 2. Datos; Parte 5, Visualización).

Other references:

General references on GIS

Longley P.A., Goodchild M.F., Maguire D.J., Rhind D.W. (2011), *Geographical Information Systems and Science*. Cullompton: Wiley.

Nunes, J. (2012). *Diccionari terminològic de sistemes d'Informació Geogràfica*. Barcelona: ICC.

GIS applied to crime analysis

Boba, R. (2001). *COPS Community Oriented Policing Introductory Guide to Crime Analysis and Mapping*. Services. US Depatment of Justice.http://www.cops.usdoj.gov. /html/cd_rom/tech_docs/pubs/IntroductoryGuidetoCrimeAnalysisMapping.pdf.

Bottoms, A. (2012). "Developing socio-spatial criminology", a Maguire, M., Morgan, R. Reiner, R. (eds.) T*he Oxford Handbook of Criminology*. Oxford: Oxford University Press.

Chainey, S., Ratcliffe, J. (2005). *GIS and Crime Mapping*. Cullompton: Willey.

Reno, J., Marcus D., Robinson, L., Brennan, N., Travis, J. (1999). *Mapping crime: principle and practice*. Crime Mapping Research Center. https://www.ncjrs.gov/pdffiles1/nij/178919.pdf.

Vozmediano, L., San Juan, C. (2005). *Criminología ambiental. Ecología del delito y de la seguridad.* Barcelona; Editorial UOC.

Weisburd, D.L., Bernasco, W., Bruinsma, G. (eds.) (2009). *Putting crime in its place: units ofanalysis in geographic*. London: Springer.

Weisburd D.L., Groff E.R., Yang S.M. (2012). *The criminology of place. Street segments and our understandingof the crim problem*. Oxford: Oxford University Press.