

Degree	Type	Year	Semester
2503710 Geography, Environmental Management and Spatial Planning	OB	3	1

The proposed teaching and assessment methodology that appear in the guide may be subject to changes as a result of the restrictions to face-to-face class attendance imposed by the health authorities.

## 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

## Teachers

Marc Sanchez Morales

## Prerequisites

Optional subject of third and fourth year. It is highly recommended to have studied subjects related to physical geography (Biogeography, Climatology and, especially, Geomorphology), as well as Case study: geography techniques, Cartography, GIS and Statistics. In any case Geography of Water Resources uses knowledge and methodologies of these subjects and if the student has not acquired them previously, they must do so on their own.

Special mention should be made of some techniques that are necessary to prepare the reports of the subject:

- Formulas and graphics with Excel
- Elaboration of cartography with SIG (ArcGis, Miramon ...)
- Composition of posters with Publisher (or any other software that fulfills the function)

The domain and skills you need to have these tools is relatively basic and with the knowledge acquired during the first courses of the degree is sufficient.

## Objectives and Contextualisation

The subject addresses the basic hydrological knowledge from a socioeconomic, physical and systemic point of view. It is logically focused on students of geography who want to have a global and basic vision of the reality that surrounds this area of knowledge, although students of degrees related to natural sciences are welcome.

The topics dealt with are intentionally located within the Catalan geographical area with the intention that the students can immediately apply the knowledge that is given in this subject. However, the theoretical and practical contents are applicable in any place and scale.

As will be discussed later, we will deal with hydrological problems, from two large areas of analysis that are often confronted: the socio-economic and the use of water as a consumer asset; and the environment, where water is one of the essential elements and in which we observe the most tangible impacts of anthropogenic activities. These impacts interact with the physical and biological processes to configure the hydrosystems as they are observed in reality

## Competences

- Draw up action and intervention plans in the territory which respond to sociodemographic and environmental problems.
- Generate innovative and competitive proposals in professional activity.
- Students must be capable of applying their knowledge to their work or vocation in a professional way and they should have building arguments and problem resolution skills within their area of study.
- Students must develop the necessary learning skills to undertake further training with a high degree of autonomy.
- Work cooperatively in multidisciplinary teams.

## Learning Outcomes

1. Describe the water cycle from a physical, socioeconomic and systematic viewpoint.
2. Generate innovative and competitive proposals in professional activity.
3. Identify the limits to growth related to the access and use of natural resources.
4. Identify the relationships between socioeconomic development, environmental sustainability and availability and access to natural resources.
5. Incorporate the different environmental, political and economic dimensions in a conceptual reflection of natural resources.
6. Students must be capable of applying their knowledge to their work or vocation in a professional way and they should have building arguments and problem resolution skills within their area of study.
7. Students must develop the necessary learning skills to undertake further training with a high degree of autonomy.
8. Work cooperatively in multidisciplinary teams.

## Content

The subject is structured in seven major themes with an approximate duration of fifteen days each, in which introductory notes, complementary texts, readings and reports are elaborated

### 1. Introductory aspects

The real hydrological cycle

Alterations of the hydrological environment as a cause of conflicts

New challenges, new paradigms

### 2. Socio-economic and legislative aspects

Socioeconomy of water

The current state of hydrological management in Catalonia

### 3. The sources of hydrological information

The information systems

The law of distracting environmental information

#### 4. Data processing

Measures in hydrology

Climatic data

Flows

Physicochemical data

#### 5. Geomorphology of river systems

The drainage network

The longitudinal profile

Geological work of rivers

River transport and sedimentation

Forms of river relief

Forms of depositional relief

#### 6. River hydrology

Theoretical aspects

Physical characteristics of the basin and its influence on the hydrodynamic functioning

#### 7. Risks associated with water

Each of these seven themes has an introductory document, one or two associated readings and a report must be prepared and discussed in the subject forum.

### Methodology

The Geography of Water Resources course is optional for the third and fourth year of the Degree in Geography and Territorial Planning and as an optional subject, it is based on the assumption that the students that are interested in the race are particularly interested in the subjects covered.

The teaching methodology aims to enhance the maturity and autonomous work of students through:

1. To Offer case studies for theoretical knowledge of the subject.
2. Presentation of personal and/or team work in the form of practices and reports.
3. Discussion, defense and debate of materials delivered with the teacher.

### Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Debate in forums on the theoretical content of the subject	10	0.4	1, 5, 7, 6
Type: Supervised			
Practices and reports	14	0.56	1, 2, 3, 7, 6, 8
Type: Autonomous			

## Assessment

The evaluation of the subject is based on: exam, reports and face-to-face activities (face-to-face meeting and field trip), with the percentage indicated on the final grade.

To be graded as Non-Evaluable you must not have done any evaluable activity or have done only one. Doing two or more assessable activities will result in a passing grade (10-5) or failing grade (4.9-0).

In order to average the evaluable activities, it is necessary to obtain in each of the three parts a grade equal to or higher than 4. This indisputably includes having attended the field trip and non-attendance means a 0 in this activity and not passing the subject.

All evaluable activities are re-evaluable, except for the field trip, which due to the type of activity can only be done on the day it is scheduled. Both the date of the evaluation and the date of the re-evaluation are marked by the faculty and appear in the teaching calendar.

It is necessary to emphasize the face-to-face activities of obligatory attendance and without which it will not be possible to have the final evaluation of the subject:

Face-to-face meeting, on the date set by the faculty

Field trip

Assessment exam and in its case re-assessment

The final note of practices and reports will take into account the participation in the forums of the units, according to:

- A. Active participation in the forums of all the units
- B. Sufficient level of participation, but not in all units or without sufficient regularity or depth
- C. Sporadic participation
- D. Without participation or with a single contribution
- A. 10% increase in the internship and report grade

B. No impact on the internship note and reports

C. 10 d% decrease in the internship grade and reports

D. Not approved in the note of practices and reports, which supposes not to surpass the asignatura

In the event of a student committing any irregularity that may lead to a significant variation in the grade awarded to an assessment activity, the student will be given a zero for this activity, regardless of any disciplinary process that may take place. In the event of several irregularities in assessment activities of the same subject, the student will be given a zero as the final grade for this subject.

In the event that tests or exams cannot be taken onsite, they will be adapted to an online format made available through the UAB's virtual tools (original weighting will be maintained). Homework, activities and class participation will be carried out through forums, wikis and/or discussion on Teams, etc. Lecturers will ensure that students are able to access these virtual tools, or will offer them feasible alternatives.

## Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Completion of teaching assignments for the subject	25%	48	1.92	2, 3, 4, 7, 6, 8

Face-to-face or forum debates on theoretical contents	25%	45	1.8	1, 4, 5, 7, 6
Practices and reports	50%	25	1	3, 4, 5, 6, 8

## Bibliography

Borja, Jordi, 2010, *Llums i ombres de d'urbanisme de Barcelona*, Empúries

Cortina, Albert, 2010, *Nova cultura del territori i ètica del paisatge*, Consell Assessor per al desenvolupament sostenible.

Bru, Josepa, 1997, *Medio ambiente poder y espectáculo*, Icaria.

Nel·lo, Oriol, 2003, *Aquí no! Conflictes territorials de Catalunya*, Empúries.

Anuari territorial de Catalunya, 2009, Societat Catalana d'Ordenació del Territori, Institut d'Estudis Catalans.

Diputació de Barcelona, *Els processos de l'agenda 21 Local en els municipis de Barcelona. Manuals (3 vol.)*.

Folch, Ramon, 2003, *El territorio como sistema, conceptos y herramientas de ordenación*. Col·lecció Territorio y gobierno. Visions num 3 DIBA Xarxa demunicipis.

Boada, Martí i Saurí, David, 2003, *El canvi global*. Ed. Rubes.

Cerdán, Rufi i altres, 2004, *Anàlisi del paisatge del Bages*, Perspectives territorials 6, DPTOP, 13-22.

Esteban, Juli, 2001, *L'ordenació urbanística: Unitats, eines i pràctiques*, Col·lecció espai públic urbà. DIBA.

DMAH 2010, Balanç i perspectives de l'avaluació ambiental a Catalunya

Regulatory framework

Decret Legislatiu 1/2005, de 26 de juliol, pel qual s'aprova el Text refós de la Llei d'urbanisme

Directiva 2001/42/CE d'avaluació ambiental de plans i programes

Ley 9/2006 de evaluación de planes y programas que pueden afectar el medio ambiente.

Llei 8/2005 de protecció, gestió i ordenació del paisatge de Catalunya

Llei 6/2009 d'avaluació ambiental de plans i programes

RDL 1/2008 de evaluación de impacto ambiental de proyectos

Webs

<http://www.diba.cat/xarxasost/>

<http://es.groups.yahoo.com/group/territori/>

<http://territori.scot.cat/cat/anuari.php>

DTES Planificació territorial

DTES Avaluació ambiental de plans i infraestructures