Universitat Autònoma de Barcelona

2019/2020

Geography of Hydrological Information

Code: 101588
ECTS Credits: 6

Degree	Type	Year	Semester
2501002 Geography and Spatial Planning	OT	3	0
2501002 Geography and Spatial Planning	OT	4	0

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

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

Geography and Spatial Planning

- Acting and intervening in the territory and its management, displaying the practical and experimental nature of geographical formations.
- Analysing and interpreting environmental problems.
- Developing critical thinking and reasoning and communicating them effectively both in your own and other languages.
- Producing innovative and competitive proposals in research and professional activity.
- Students must be capable of communicating information, ideas, problems and solutions to both specialised and non-specialised audiences.
- Summarising and communicating geographical problems to the media.

Learning Outcomes

1. Carrying out oral presentations using an appropriate academic vocabulary and style.
2. Communicating the geographical problems about issues related to global change.
3. Defining the environmental problems in order to understand global change.
4. Describing the main characteristics of global change.
5. Drawing up innovative proposals.
6. Effectively communicating and applying the argumentative and textual processes to formal and scientific texts.
7. Identifying the ideas and expressing them in various languages with linguistic correctness.

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	45	1.8	3, 6, 1, 7
Type: Supervised			
Practices and reports	25	1	3, 6, 1, 7, 5
Type: Autonomous			
Completion of the teaching assignments of the subject	48	1.92	3, 6, 1, 7, 5

Assessment

The evaluation of the subject is based on: examination, reports and seminar activities (seminar and field trip), with the percentage indicated on the final grade.

To obtain the qualification of Non-evaluable, you must not have carried out any activity that can be evaluated or you have done only one. Doing two or more assessable activities will result in a pass mark (10-5) or fail (4.9-0).

To make an average of the activities evaluated, you have to obtain in each one of the three parts a score equal to or greater than 4. This includes, unquestionably, having assisted in the field trip and non-attendance means 0 in this activity and not overcome the subject.

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

It is necessary to emphasize that the seminars are of forced attendance and without which it will not be possible to have the final evaluation of the subject:

- Seminar, on the date fixed by the faculty
- Field trip
- Evaluation test and re-evaluation

The final grade 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 units
B. Level of participation sufficient, but not in all units or without sufficient assiduity or deepening
C. Sporadic participation
D. Without participation or with a single contribution

A. 10% increase in the practicals and reports note

B. Without incidence in the note of practices and reports

C. 10 d% reduction in the practicals and reports note

D. Not approved in the note of practices and reports, which means not exceeding the subject

Thecopying or plagiarism of material, both in the case of works and in the case of examinations, constitute a crime that will be sanctioned with a zero to the activity. In the case of recidivism, the entire subject will be suspended. Let's remember that a "copy" is considered a work that reproduces all or most of the work of one or more partners. "Plagiarism" is the fact of presenting all or part of a text of an author as its own, without mentioning the sources, being in paper format in digital format. See UAB documentation on "plagiarism" at: http://wuster.uab.es/web_argumenta_obert/unit_20/sot_2_01.html

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Exam	30%	5	0.2	2, 3, 6, 1, 7, 5
Field trip	10%	12	0.48	3, 6, 1, 7, 5
Practices	30%	8	0.32	3, 4, 6, 1, 7, 5
Reports	30%	7	0.28	2, 3, 6, 1, 7, 5

Bibliography

Breña, A. i Jacobo, M. 2006, Principios y fundamentos de la hidrología superficial, Mèxic, UAM

Elliot, S. 2010, El río y la forma, Santiago, RIL Editores

ACA, Aigua i canvi climàtic: impactes hidrològics, Barcelona, DMAH

ACA, Aigua i canvi climàtic: implicacions socioeconòmiques, Barcelona, DMAH

http://www.idescat.net/

http://mediambient.gencat.net/cat/inici.jsp

http://mediambient.gencat.net/aca/ca/inici.jsp

http://www.meteocat.com/

http://www.hec.usace.army.mil/

http://www.creaf.uab.es/cgibin/order/mm_order.cgi?NomPlana=cat/mm_dursi/index.htm&Idioma=Catala&Directo