Universitat de Lleida

DEGREE CURRICULUM

WATER IN THE MEDITERRANEAN

Coordination: TENA PAGAN, ALVARO JOAQUIN

Academic year 2022-23

WATER IN THE MEDITERRANEAN 2022-23

Subject's general information

<table>
<tr><td>Subject name</td><td>WATER IN THE MEDITERRANEAN</td></tr>
<tr><td>Code</td><td>101164</td></tr>
<tr><td>Semester</td><td>1st Q(SEMESTER) CONTINUED EVALUATION</td></tr>
<tr><td>Typology</td><td>
<table>
<tr><th>Degree</th><th>Course</th><th>Character</th><th>Modality</th></tr>
<tr><td>Bachelor's Degree in Geography</td><td>4</td><td>OPTIONAL</td><td>Attendance-based</td></tr>
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<tr><td>Course number of credits (ECTS)</td><td>6</td></tr>
<tr><td>Type of activity, credits, and groups</td><td>
<table>
<tr><th>Activity type</th><th>PRACAMP</th><th>PRAULA</th><th>TEORIA</th></tr>
<tr><td>Number of credits</td><td>2</td><td>2.5</td><td>1.5</td></tr>
<tr><td>Number of groups</td><td>1</td><td>1</td><td>1</td></tr>
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<tr><td>Coordination</td><td>TENA PAGAN, ALVARO JOAQUIN</td></tr>
<tr><td>Department</td><td>ENVIRONMENT AND SOIL SCIENCES</td></tr>
<tr><td>Teaching load distribution between lectures and independent student work</td><td>Lectures and exercises: 60 hours. Here we include lectures (theory), exercises the students will develop with the supervision of the lectures, and invited conferences.

Additional work: 90 hours. In these hours the student will have to go beyond the contents that are given in the lectures by reading the basic materials given in class and other complementary readings. In addition, it is during this work when the students will complete the practical exercises that will be developed, mostly, in the classroom with the teachers.</td></tr>
<tr><td>Important information on data processing</td><td>Consult this link for more information.</td></tr>
<tr><td>Language</td><td>Mostly in Spanish and Catalan, although part of the presentations and readings can be in English.</td></tr>
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WATER IN THE MEDITERRANEAN 2022-23

Distribution of credits	1. The Mediterranean region in its context (1 credit) a. Mediterranean region definitions b. Main characteristics of Mediterranean regions c. Environmental problems in the Mediterranean region d. Factors of change: past, present, future. 2. Hydrological extremes: Floods and droughts (0,5 credit) a. Storms and Floods b. Droughts and Heat waves c. Strategies to mitigate the Hydro-climatic risks 3. Surface hydrology and fluvial dynamics (1,25 credit) a. Surface hydrology b. Mediterranean rivers c. Changes in channel and catchment Systems 4. Groundwater hydrology (1 credit) a. Groundwater in the Mediterranean region b. Karst systems in the Mediterranean region c. Groundwater exploitation d. Groundwater pollution 5. Water Management in the Mediterranean area (1 credit) a. River basin management b. Water budgets: peculiarities, examples and applicability c. Freshwater reserves and resources d. The Water Framework Directive Note 1: in this distribution we have included both all theoretical and practical credits. Note 2: There may be occasional changes depending on the progress of the group and other aspects not contemplated in the preparation of this sheet.

WATER IN THE MEDITERRANEAN 2022-23

Teaching staff	E-mail addresses	Credits taught by teacher	Office and hour of attention
CARRERO CARRALERO, ESTRELLA DEL CARMEN	estrella.carrero@udl.cat	,8	
MASICH POLO, JOSEP MARIA	josepmaria.masich@udl.cat	2	
TENA PAGAN, ALVARO JOAQUIN	alvaro.tena@udl.cat	3,2	

Learning objectives

These are the specific objectives of the subject:

1. Understand the Mediterranean space in relation to water.
2. Introduce the student in the geomorphological and hydrological particularities of the Mediterranean area.
3. Contextualize and understand the water problems suffered by the Mediterranean basin.
4. Deepen the knowledge of some of the main methods of climate and hydrological calculation useful in this context.
5. Introduce to the student methods and field techniques to acquire hydrological information.

Competences

- CB1 Possess and understand knowledge in a study area that starts from the base of general secondary education, and is usually found at a level that, although supported by advanced textbooks, also includes some aspects that imply knowledge from the vanguard of his field of study
- CB2 Apply their knowledge to their work or vocation in a professional manner and possess the skills that are usually demonstrated through the elaboration and defence arguments and the resolution of problems within their area of study
- CB5 Know how to develop those learning skills necessary to undertake further studies with a high degree of autonomy
- CG1 Assess the mechanisms of interaction of society with the environment
- 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
- CE6 Acquire the skills and methodologies of the geographer's fieldwork
- CE11 Acquire the habits of analysis of geographic data to proceed to its orderly and reasoned exposition, either through an oral presentation or through a written report
- CT3 Acquire training in the use of new technologies and information and communication technologies
- CT5 Acquire essential notions of scientific thought

Subject contents

1. The Mediterranean region in its context (1 credit)

a. Mediterranean region definitions
b. Main characteristics of Mediterranean regions
c. Environmental problems in the Mediterranean region
d. Factors of change: past, present, future.

2. Hydrological extremes: Floods and droughts (0,5 credit)

a. Storms and Floods
b. Droughts and Heat waves
c. Strategies to mitigate the Hydro-climatic risks

3. Surface hydrology and fluvial dynamics (1,25 credit)

a. Surface hydrology
b. Mediterranean rivers
c. Changes in channel and catchment Systems

4. Groundwater hydrology (1 credit)

a. Groundwater in the Mediterranean region
b. Karst systems in the Mediterranean region
c. Groundwater exploitation
d. Groundwater pollution

5. Water Management in the Mediterranean area (1 credit)

a. River basin management
b. Water budgets: peculiarities, examples and applicability
c. Freshwater reserves and resources
d. The Water Framework Directive

Note 1: in this distribution we have included both all theoretical and practical credits.

Note 2: There may be occasional changes depending on the progress of the group and other aspects not contemplated in the preparation of this sheet.

Methodology

1. Master classes.

2. Problem solving.

3. Practices.

4. Seminars.

Development plan

It is a subject closely related to other subjects of the Geography Degree, in which the weight of previous knowledge and newly acquired in the theoretical part are essential to understand the processes that take place in

Mediterranean environments. This subject will also consist of a practical part, in which the basic concepts acquired will be essential to be able to perform the practical exercises in the classroom autonomously, with the help of the documentation provided and the possibility of solving their doubts with the teacher in the classroom or in specific tutorials. In addition, the subject will consist of two field practices that will help students to assimilate part of the knowledge acquired in the classroom, which will also have to do a job.

Evaluation

Final Exam (40% of the final grade).

It is necessary to pass the theoretical exam with a grade of 5 (5 out of 10) or higher as a condition to pass the course. In the case of not passing the theoretical exam the student will have the right to a recovery.

Practices (40% of the final grade).

Evaluation of the exercises completed during the practical classes. Each exercise must be overcome with a minimum score of 5. In the case that the practices do not obtain a minimum grade of 5, or are not delivered within the established deadline, they must be delivered during the month of January (on the date of the exam the 1st call) and only a grade of 5 can be chosen. The manner and deadline for the presentation of each practice will be communicated in each case in a specific manner.

Fieldwork report (20% of the final grade)

Evaluation of the reports made after the field trips. In the event that the practices are not delivered within the established deadline, they must be delivered during the month of January (on the date of the examination of the 1st call). In this case, the student will have a -30% penalty in this section. The manner and period of presentation of each practice will be communicated in each case in a specific way.

Make-up exam

This will available for the students that do not pass the exams (Theory/Concepts) and the individual research project.

Note: The evaluation is continuous. Students who combine their studies with a partial or full-time job have the right to request an alternative evaluation within 5 days of the beginning of the semester. For more information, contact the Secretary of the Faculty of Arts.

Bibliography

Birot, Y., Grace, C. and Palahi, M. (2011) Water for Forests and People in the Mediterranean Region - A Challenging Balance. What Science Can Tell Us. European Forest Institute. 175 pp.

Brooks, D.B. (2000): Water Balances in the Eastern Mediterranean. International Development Research Center. 160 pp.

Sabater, S., Damià Barceló, D. et al (2012): Water Scarcity in the Mediterranean: Perspectives Under Global Change. The Handbook of Environmental Chemistry. 234 pp.

Strahler, A. (2016): Introducing Physical Geography. Wiley Indian Pvt. Ltd; 6th Edition. 660 pp.

Tarbuck, E. J., Lutgens, F.K. (2013): Earth Sciences: an introduction to physical geology. Pearson Education. 736 pp.

Thornes, J.B., Wainwright, J. (2003): Environmental Issues in the Mediterranean: Processes and Perspectives from the Past and Present. Routledge Studies in Physical Geography and Environment. 560 pp.

Woodward, J. (2009): The Physical Geography of the Mediterranean Oxford University Press. 592 pp.

Note: these are general references. The Student will receive further lectures and materials in during the subject (if appropriate).