Universitat de Lleida

DEGREE CURRICULUM

GESTIÓ DE RECURSOS HÍDRICS

Coordination: BATALLA VILLANUEVA, RAMON J.

Academic year 2023-24

GESTIÓ DE RECURSOS HÍDRICS 2023-24

Subject's general information

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<tr><td>Subject name</td><td>GESTIÓ DE RECURSOS HÍDRICS</td></tr>
<tr><td>Code</td><td>102463</td></tr>
<tr><td>Semester</td><td>2nd 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>Double degree: Bachelor's degree in Forest Engineering and Bachelor's degree in Nature Conservation</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>
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<tr><th>Activity type</th><th>PRACAMP</th><th>PRAULA</th><th>TEORIA</th></tr>
<tr><td>Number of credits</td><td>1</td><td>2</td><td>3</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>BATALLA VILLANUEVA, RAMON J.</td></tr>
<tr><td>Department</td><td>ENVIRONMENT AND SOIL SCIENCES AND CHEMISTRY</td></tr>
<tr><td>Teaching load distribution between lectures and independent student work</td><td>- Face-to-face teaching (classroom or online): 60 hours
- Student's autonomous work: 90 hours</td></tr>
<tr><td>Important information on data processing</td><td>Consult this link for more information.</td></tr>
<tr><td>Language</td><td>Catalan / Spanish</td></tr>
<tr><td>Distribution of credits</td><td>- Theory (classroom or online): 3
- Practical work (classroom and fieldwork): 3</td></tr>
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GESTIÓ DE RECURSOS HÍDRICS 2023-24

Teaching staff	E-mail addresses	Credits taught by teacher	Office and hour of attention
BATALLA VILLANUEVA, RAMON J.	ramon.batalla@udl.cat	1	
PIQUÉ ALTÉS, GEMMA	gemma.piquealtes@udl.cat	4,1	
VERICAT QUEROL, DAMIAN	damia.vericat@udl.cat	,9	

Subject's extra information

This course expands and develops the knowledge on hydrology and water resources that the student has learned during the degree, especially in relation to the hydroclimatic characteristics of drainage basins in Mediterranean areas. The course also offers theoretical and practical knowledge for the acquisition and hydroclimatic data and information processing, the extraction of knowledge on hydrological dynamics, and its relationship with other environmental variables (relief, rivers, vegetation, soils) focused on water management in the territory. In addition, a series of calculation, analysis and modeling tools will be presented and applied to hydrological and hydraulic data.

Learning objectives

O.1. Understanding the functioning of water in the physical environment and its relationship with other components of the natural system (relief, climate) and anthropic activity, especially in Mediterranean climate areas.

O.2. Learning and application of tools for the acquisition and analysis of hydrological data and its interpretation.

The course shall be developed in person and / or virtual modes depending on the limitations or restrictions imposed by the competent bodies (University of Lleida, Generalitat de Catalunya, Gobierno de España) during the course of the corresponding semester. All the contents and methodological axes have already been adapted to guarantee the achievement of the subject's competencies in whatever way it is finally taught. In the event that the field sessions cannot be carried out, they will be replaced by theoretical classes in which techniques and methods will be presented during specific presentations.

Competences

- Ability to identify the different physical elements of the forest environment and renewable natural resources (water) susceptible of protection, conservation and use in the forest field.

- Ability to analyze the ecological structure and function of forest systems and resources, including landscapes.

- Knowledge of the degradation processes that affect forest systems and resources and capacity to the use of techniques to protect the forest environment, forest hydrological restoration and conservation of the biodiversity.

- Ability to solve technical problems derived from the management of natural areas.

- Ability to design, direct, elaborate, implement and interpret projects and plans, as well as to write technical reports, recognition reports, evaluations, compartments and appraisals.

- Ability to understand, interpret and adopt scientific advances in the forest field, to develop and transfer technology and to work in a multilingual and multidisciplinary environment

Subject contents

THEORY:

- The drainage basin

- Water balance, components and effects of the global change

- Fluvial hydrology

- Hydrology and water resources in the Mediterranean

- Water governance: institutional framework

CLASSROOM PRACTICES:

- Measurement and treatment of hydroclimatic data (water balance, estimation of hydrological extremes, floods and droughts, flow frequency curves, runoff coefficients, comparison between basins)

FIELD WORK:

- Measurement of fluvial variables and hydrometric controls. Collection, calculation and data processing

Methodology

- Face-to-face or online sessions in the classroom

- Classroom practices (face-to-face or online) related to the theoretical content of the subject

- Field work to learn hydrometric measurements and sampling techniques (data collection, calculations, report preparation and presentation of the work)

- Individual and group tutorials

- Weekly monitoring of the progress of each practice in the classroom (virtual)

- Continuous delivery of exercises

- Use of computer tools and statistics: databases

- Demonstration of tools by teachers (face-to-face or through videoconferences)

- Specific work outside the classroom by the student

- Doubts solving through videoconferences

- Solving problems demonstration videos

- Set-up of forums (Virtual Campus) for the discussion of problems that arise when carrying out the practical exercises

Development plan

This subject is optional and it complements and develops content that students have acquired in previous subjects (e.g. Forest Hydrology) throughout the degree, but with a broader vision from the territorial point of view and

application to management.

Evaluation

Block #1. Classroom and laboratory practices (essential)

- Continuous assessment through the submission of classroom practices (5) throughout the semester and a laboratory practice (the six practices together are equivalent to 50% of the grade). Continuous and mandatory submission on the set dates or joint submission on the day of the make-up exam. If the submission is made on the day of the make-up exam, the maximum mark that can be attained will be 5.

Block #2. Theory (essential)

- Exam as indicated in the ETSEA academic calendar (30% of the grade). This activity is recoverable and to opt for the average the minimum mark must be a 4. You will need to bring a calculator to the exam.

Block #3. Field report (essential)

- Work and report on field practices (20%). This activity is recoverable and to opt for the average the minimum mark must be a 4.

Recovery

- Block #1 of classroom practices is recoverable. In this case, the maximum mark that can be attained will be 5 and to opt for the average the minimum grade must be a 4.

- The final exam (Block #2) is recoverable and the recovery will take place on the day, time and place indicated in the academic calendar. You will need to bring a calculator to the exam.

- Field report block #3 is recoverable. In this case, the maximum mark that can be attained will be 5.

General considerations

- The final grade is the weighted average of the three blocks according to the weighting factors indicated above.

- ALL the theoretical and practical teaching materials taught and given in the classroom are assessable materials, as well as the Hydrology chapter by Balasch et al. (2016): Physical Geography Manual, available in .pdf on the Virtual Campus.

- Attendance at the training activities of the course (theoretical classes, classroom practices and field trips) will be valued up to +5% of the final grade

Plagiarism or copying

Law 2/2022 on university coexistence regulates what is considered academic fraud: any premeditated behavior tending to falsify the results of an exam, one's own or someone else's, taken as a requirement to pass a subject or certify academic performance. Offenses can be serious or very serious. You can consult the UdL in: Normativa de convivència universitària

When copy is detected:

• If copying or plagiarism is done with fraudulent means, the assessment activity will be withdrawn (therefore it will be suspended) and a report and the evidence will be sent to the coordination of the degree and the heads of studies to start a disciplinary file. The applicable sanctions include, among others and depending on the seriousness of the fault, the loss of the right to be evaluated for the subject, the loss of enrollment for a semester or a course or expulsion for up to three years .

• If there is spontaneous copying between students (behaviors such as speaking in an exam, looking at a colleague's exam, etc.) measures will be applied that may lead to the withdrawal of the activity (therefore, it is suspended). A report will also be made to the coordination of the degree and to the heads of studies if it is considered appropriate to open a disciplinary file.

Alternative assessment

Students who combine their studies with a full-time job or for reasons of family reconciliation have the right to request an alternative assessment at the beginning of the semester. The student who wants to take part in the alternative assessment must present a work contract or justify, in writing addressed to the dean, the reasons that make it impossible for him or her to take the continuous assessment within a period of five (5) days since the beginning of the semester. For more information, send an email to the ETSEAFIV Secretary. The alternative assessment test will consist of the delivery of at least the classroom practices (5) of Block #1 (50% of the grade), a written test that will account for 30% of the final grade of the subject, and assistance with the field trip and delivery of the field report (20%). All three tests are recoverable.

Bibliography

Basic reading (Textbook)

- BALASCH, J.C., BATALLA, R.J., MÀSICH, J.M., VERICAT, D. (2016) (eds.): Geografia física. Fundació per la Universitat Oberta de Catalunya. Barcelona, 408 p.

Complementary materials

- HERAS, R. (1972): Manual de Hidrología. Madrid: Instituto de Hidrología.
- MARCO, J., REYES, M. (1982): Hidrología. Universidad Politécnica de Valencia, Servicio de Publicaciones, 387 p.
- BROOKS, D.B. (2000): Water Balances in the Eastern Mediterranean. International Development Research Centre. 160 p.
- SABATER S., BARCELÓ, D. et al (2012): Water Scarcity in the Mediterranean: Perspectives Under Global Change. The Handbook of Environmental Chemistry. 234 p.
- CONACHER, A, SALA, M. (1998): Land Degradation in Mediterranean Environments. Wiley-Blackwell, Chichester, 560 p.

Complementary materials (pràctical work)

- BATALLA, R.J. (1998): Apunts i pràctiques per a l'estudi dels processos fluvials. Lleida, Paperkite, Col·lecció Quaderns DMACS, 14, 78 p. DL. L-767-1998.
- UBEDA, X, SALA, M. ROVIRA, A., BATALLA, R.J. (2002): Guia pràctica per a l'estudi de l'aigua. Col·lecció Textos Docents 225. Edicions de la Universitat de Barcelona. 1-80. ISBN 84-8338-319-5.