COURSE DATA

Data Subject	
Code	33787
Name	Hydrology
Cycle	Grade
ECTS Credits	6.0
Academic year	2019 - 2020

Study (s)

Degree	Center	Acad. year	Period
1318 - Degree in Geography and the Environment	Faculty of Geography and History	3	First term

Subject-matter

Degree	Subject-matter	Character
1318 - Degree in Geography and the Environment	597 - Hydrology	Obligatory

Coordination

Name	Department
CERDA BOLINCHES, ARTEMIO	195 - Geography

SUMMARY

The course "Hydrology" presents the basic contents of the Continental Hydrology and Marina, and special emphasis on i) the role of water in the Earth system, and ii) the interaction between human activity and hydrological processes.

PREVIOUS KNOWLEDGE

Relationship to other subjects of the same degree

There are no specified enrollment restrictions with other subjects of the curriculum.

Other requirements

OUTCOMES

1318 - Degree in Geography and the Environment

- Have capacity for analysis and synthesis.
- Have oral and written communication skills in one's own language and in a foreign language.
- Be able to work independently.
- Be able to work in interdisciplinary teams.
- Show motivation for quality, responsibility and intellectual honesty.
- Learn about physical geography.
- Learn about methodology and fieldwork.
- Be able to relate the natural environment and the social and human spheres.
- Analyse and value landscapes from a spatial-temporal perspective.
- Learn basic techniques for fieldwork in geography and particularly for reading and interpreting the landscape in geographic terms.

LEARNING OUTCOMES

At the end of first semester, the course *Hydrology* must be allowed the student to know the basic content of the hydrology, with special emphasis on the connections between the water and other land areas, with particular emphasis on interaction between human activities and natural dynamics of the hydrological cycle.

DESCRIPTION OF CONTENTS

1. Introduction

Unit 1. Definition and branches of Hydrology. Brief history and current context. The hydrological cycle. Resources, uses and problems

2. The drainage basin

Unit 2. The drainage basin as a working unit. Hydrogeomorphology, morphometry, drainage network.

3. Precipitation and interception

Unit 3. Characteristics of the rain. Types of rain. The analysis of precipitation. Interception Concepts, measurement and basic factors.

4. Evaporation and Evapotranspiration

Thematic unit 4. Evapotranspiration. Methods and measurements.

5. Infiltración, agua subterránea y acuíferos
Infiltration, groundwater and aquifers
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Unit 5. Infiltration. Water storage in the soil. Percolation. Aquifers.

6. Surface runoff

Unit 6. Genesis of surface runoff. The response of the basin: the hydrograph. Floods. River regimes.

7. Ocean waters and marine dynamics

Unit 7. Large ocean basins: oceans and seas. Characteristics of seawater. Global water balances. Ocean circulation.

WORKLOAD

ACTIVITY	Hours	% To be attended
Theory classes	30,00	100
Other activities	15,00	100
Classroom practices	15,00	100
Study and independent work	30,00	0
Readings supplementary material	10,00	0
Preparation of evaluation activities	20,00	0
Preparing lectures	10,00	0
Preparation of practical classes and problem	20,00	0
TOTAL	**150,00**	

TEACHING METHODOLOGY

Classes: The classes consist of 60 minutes devoted to the presentation of basic knowledge of the subject. Of these 15 will be practical classes with computer use, cartographic material and hydrological data.

PREPARATION CLASS THEORY: Students prepare lectures from material supplied by the teacher and manuals.

PREPARATION FOR PRACTICAL CLASSES: Students prepare practical classes from the guide and materials provided by the teacher

ACTIVITIES: Students perform the activities proposed in connection with field work

EVALUATION

The evaluation will be conducted as follows:
• Examination of theory: 60% of the mark. The minimum rating of this section to be averaged with the other 4 points.
• Control-assessment of practices: 30% of the mark. To perform control practices will be required to have previously delivered condition booklets practices developed during the course, as specified by the teacher.
• Complementary activities: 10% of the note.

REFERENCES

Basic

- Bras, R.L. 1990. Hydrology. Massachusetts, Addison, 643 pp.

- Brutsaert, W. 2005. Hydrology. Cambridge Univ. Press. Cambridge, 456 pp.

- Davie, T. 2003. Fundaments of Hydrology. Editorial Routledge, 169 pp.

- Davis, S.N. y Wiest, R. 1971. Hidrogeografía. Editorial Ariel, 350 pp.

- Jones, J.A.A. 2001. Global hydrology processes, resources and environmental manage ment. Editorial Longman, 399 pp.

- Llamas, J. 1993. Hidrología general. Universidad del País Vasco, Bilbao, 328 pp.

- Martínez de Azagra, A. y Navarro Hevia, J. 1996. Hidrología forestal: el ciclo hidrológico.Valladolid,Universidad de Valladolid, Secretariado, 286 pp.

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- Todd, D. K. y Mays, L. W. 2005. Groundwater Hydrology. John Wiley, 453 pp.

- Viessman, W. y Lewis, G. L. 2003. Introduction to Hydrology. Prentice Hall, 342 pp.

- Ward, R.C. y Robinson, M. 2000. Principles of Hydrology. London, McGraw-Hill, 450 pp.

- Bielza, V. 1984. Geografía general. Geografía física. Tomo I, Madrid, Taurus, 325 pp.

- Davis, R.A. 1991. Oceanography. Dubuque, Brown Pub., 434 pp.

- Rodríguez, J. 1982. Oceanografía del Mar Mediterráneo. Madrid, Pirámide, 174 pp.

ADDENDUM COVID-19

This addendum will only be activated if the health situation requires so and with the prior agreement of the Governing Council

English version is not available