

**COURSE DATA****Data Subject**

Code	35003
Name	Geomorphology II: Processes, Forms and Systems
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	2	Second term

Subject-matter

Degree	Subject-matter	Character
1318 - Degree in Geography and the Environment	596 - Geomorphology	Obligatory

Coordination

Name	Department
CALVO CASES, ADOLFO	195 - Geography

SUMMARY

Geomorphology studies the landforms of the Earth (mountains, plains, rivers, glaciers, ...) and their genesis and evolution as a result of the performance of a set of processes or agents called 'erosion'. Just as other Earth Sciences, with which it shares many interpretative links, geomorphology is an analytical and synthetic discipline, in which the different elements of modeling are studied and considered in their interactions. Landforms are dynamic and interdependent with other environmental components that converge on the surface of the Earth's crust atmosphere and biosphere. But also with underlying this: lithosphere and asthenosphere. The interaction between processes and forms, and changing forms of land modeling are geomorphic features of the system, whose relief articulates the set of elements that shape the landscape, geographical and environmental systems.

The course "Geomorphology II: Processes, methods and systems," along with "Geomorphology I: The formation of relief" is intended to show the principles and theoretical foundations of geomorphology as a science, facilitate the understanding of how the geomorphological system and display fields Applicability of this science. It is, thus, consider the basic concepts and terminology, and the recognition and interpretation of the ways images and in the field, in order to gradually encourage students' work will be



encouraged.

PREVIOUS KNOWLEDGE

Relationship to other subjects of the same degree

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

Other requirements

Any

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

Ability to observe the lay of the land, identifying their diversity and relating these to its genesis, and based on the relationship between processes and forms.

- Practice different techniques in the classroom and on the field you favor the autonomous student progress.- Integrate content with environmental geomorphological interpretation of the natural system.
- Relate the contents with other subjects of the degree.



DESCRIPTION OF CONTENTS

1. The geomorphological System

- 1.1. The interaction between internal and external processes. Denudation rates
- 1.2. Systems and geomorphological systems: systems in relation to Area: functional (open, closed and isolated). geomorphic systems forms as structures and processes (morphological systems, cascading and -response process)
- 1.3. Interaction and feedback
- 1.4. Balance and sensitivity thresholds

2. Meteorization processes and forms.

- 2.1. Atmosphere interaction \ lithosphere
- 2.2. Mechanical meteorization processes: decompression, crystal growth and temperature changes
- 2.3. Chemical meteorization: dissolution, hydration, oxidation and reduction, carbonation and hydrolysis
- 2.4. Interaction between physical and chemical processes and biological activity
- 2.5. Meteorization rates. Morphoclimatic areas
- 2.6. Products of weathering: solids and solutes. Regolith and soil
- 2.7. Control of landforms by the weathering of rocks
- 2.8. Main forms associated with the weathering of rocks

3. The slopes as systems of processes-forms

- 3.1. Components of the shape of the slopes: characteristic angles, profiles and spatial variation in the forms
- 3.2. Surface components of forms: deposits, soils and coverage vegetable
- 3.3. Transport processes and forces involved: Impact and rain splash, arroyada diffuse and concentrated surface, subsurface and arroyada landslide
- 3.4. Interaction control processes and forms
- 3.5. Temporal changes in the forms: interaction processes \ forms in the time. Erosion rates. Modelling of evolution

4.

Prueba un nuevo navegador con traducción automática. Descargar Google Chrome



Traductor

español

inglés

alemán

Detectar idioma

inglés

catalán

francés



El sistema fluvial: articulación, conexión, procesos y formas

The river system: articulation, connection, processes and forms

- 4.1. The drainage basin: the disposal of its networks and connecting channels and interaction slopes \ channels
- 4.2. Controls river systems: lithology, tectonics, grassroots level, regime floods, vegetation and land use
- 4.3. Processes in river channels: energy and sediment transport
- 4.4. Forms of waterways: interactions and thresholds
4. 5. Fluvial sedimentary environments: fans, alluvial plains, terraces and deltas



5. The coastal system

- 5.1. Energy coastal processes and factors
- 5.2. Erosive coasts
- 5.3. Costas accumulation
- 5.4. The interaction between rivers and the sea, estuaries, deltas and lagoons
- 5.5. Changes in sea level and the response on the coasts

6. Wind system

- 6.1. Wind and wind exposure. Environmental conditions necessary
- 6.2. Transport Processes: Forces involved and erosion rates
- 6.3. wind abrasion
- 6.4. Forms of wind deflation
- 6.5. Morphology of the aeolian deposits
- 6.6. Soil loss by wind processes in relation to activities human

7. Glacier system

- 7.1. Glacier system components. Snow and ice accumulation.
- 7.2. Types of glaciers
- 7.3. Processes: Forces involved in glacial erosion
- 7.4. Forms of glacial erosion
- 7.5. The materials transported by glaciers
- 7.6. Forms of subglacial, supraglacial and marginal deposition and proglacial
- 7.7. Forms associated with quaternary glaciation

8. Geomorphological mapping and morphometry

- 8.1. The geomorphological map: types, scale and resources
- 8.2. Reading and interpreting maps geomorphological
- 8.3. Principles for the preparation of geomorphological maps
- 8.4. Numerical analysis of the components of landforms
- 8.5. The use of digital elevation models and digital mapping in geomorphology
- 8.6. Geomorfométrico Analysis landforms

**WORKLOAD**

ACTIVITY	Hours	% To be attended
Theory classes	30,00	100
Other activities	15,00	100
Classroom practices	15,00	100
Preparation of evaluation activities	30,00	0
Preparing lectures	30,00	0
Resolution of case studies	30,00	0
TOTAL	150,00	

TEACHING METHODOLOGY

It is recommended continued assistance to theoretical classes and practices in both classroom and field and performing work memories. In case of difficulty attendance it is necessary to indicate the early going.

1. Classroom activities

In the lectures the fundamentals of each topic of the course will explain, looking for students to understand all the concepts and can handle them in interpreting the forms of relief. All explanations will be supported in artwork and example. Active participation of students, both in raising doubts and discussion of the issues is needed.

The practical sessions in the classroom, synchronized with themes, intended to complete the theory with concrete exercises which will then be submitted for evaluation.

Field practical classes are essential to consolidate knowledge, which are considered mandatory. After each session, a report that will be evaluated will be developed.

2. Preparation of the theoretical and practical

Students have a basic bibliography of a selection for each subject will be recommended. It is very convenient a previous reading to the explanations in class and developing schemes, which combined with the notes taken during class should be the subject of study for exams.

Practices regarding many of the tasks undertaken in the classroom or on the field should be completed as self-employment for reporting.

3. Tutorials

Students have six hours a week for tutorials with the teacher and any relevant question is available also by email. During the course they will be set at least two hours of mandatory tutoring in order to guide students.



EVALUATION

A theoretical-practical exam will be done, at the end of the term, on the date indicated by the Faculty.

The final grade will consist of:

- Theoretical and practical exam (60%), it is essential to pass the examination for the consideration of the complementary activities.
- Reports of complementary activities and practical work (40%), delivered during the course on the scheduled dates and which score for the two calls.

REFERENCES

Basic

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- Birot, P., 1981. Les processus d'érosion à la surface des continents. Masson. 605 p.
- Butzer, K. W., 1976. Geomorphology from the earth. Harper. 463 p.
- Chorley, R. J., Schumm, S. A., Sudgen, D. E., 1984. Geomorphology. Methuen. 605 p.
- Christopherson, R., 2006. Geosystems: An Introduction to Physical Geography. Pearson. 752p.
- Derruau, M., 1991. Geomorfología. Ariel. 499 p.
- Fairbridge, R. W. (Ed.), 1968. The encyclopedia of geomorphology. Reinhold, 1295 p.
- Gardiner, V., 1983. Geomorphological field manual. Allen Unwin. 254 p.
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- Grotzinger, J., Jordan, T.H., Press, F., Siever, R., 2009. Understanding Earth. Freeman. 672 p.
- Gutierrez Elorza, M., 2001. Geomorfología climática. Omega. 642 p.
- Gutierrez Elorza, M., 2008. Geomorfología. Pearson. 898 p.
- Huggett, R., 2007. Fundamental of Geomorphology. Routledge. 458 p.
- López Bermúdez, F., Rubio Recio, J. M., Cuadrat, J. M., 1992. Geografía física. Cátedra. 594 p.
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- Muñoz Jiménez, J., 1992. Geomorfología general. Síntesis. 351 p.
- Pedraza Gilsanz, J. et al., 1996. Geomorfología: principios, métodos y aplicaciones. Rueda. 414 p.
- Rice, R. J., 1983. Fundamentos de geomorfología. Paraninfo. 392 p.
- Rosselló, V. M., Panadera, J. M., Pérez Cueva, A., 1994. Manual de geografía física. Universitat de València. 438 p.



- Strahler, A. H., Strahler, A. N., 2006. Introducing physical geography. John Wiley & Sons. 728 p.
- Strahler, A. N., 1989. Geografía física. Omega. 550 p.
- Summerfield, M. A., 1993. Global Geomorphology: an introduction to the study of landforms. Longman. 537 p.
- Viers, G., 1981. Geomorfología. Oikos y Tau. 320 p.
- Harvey, A. M. 2012 Introducing Geomorphology: A Guide to Landforms and Processes. Dunedin Academic Press. 160p.

ADDENDUM COVID-19

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

1. Contenidos

Teoría: Se han reducido ligeramente, dentro de los temas restantes, los contenidos para su mejor adaptación a las clases online.

Prácticas: Se mantienen los contenidos inicialmente recogidos en la Guía Docente tal y como se especifica en el material de apoyo de las prácticas disponible en Aula Virtual desde el 27 de enero de 2020 correspondiente a lo que resta de curso académico: Estas prácticas pretenden incorporar conocimientos básicos de Edafología, [...] Además, refuerza los conocimientos adquiridos en el tema 2 ("Procesos y formas de meteorización", concretamente su apartado 2.6. Productos de la meteorización: sólidos y solutos. Regolita y suelo.) y el tema 3 ("Las laderas como sistemas de procesos-formas", apartado 3.2. Componentes superficiales de las formas: depósitos, suelos y cobertura vegetal) de la Guía Docente de la asignatura.

Se han reducido los contenidos inicialmente recogidos en la guía docente, seleccionando los indispensables para adquirir las competencias fundamentales de la asignatura y se excluye de la materia de examen el Tema 8.

2. Volumen de trabajo y planificación temporal de la docencia

Teoría: Se han reducido ligeramente (1h30' en lugar de 2h) las clases. Compactadas en duración según recomendación del rectorado.

Prácticas: Ante la imposibilidad de acudir físicamente al Laboratorio de Geomorfología, el trabajo que se pedía inicialmente para la evaluación de esta parte ha sido sustituido por un trabajo bibliográfico individual que reúna los conocimientos básicos que los alumnos deben adquirir mediante la respuesta a 4 preguntas concretas. Los requisitos y características de dicho trabajo (extensión, contenido, tamaño y tipo de fuente, etc.) están recogidos en un documento disponible en Aula Virtual, así como la tarea habilitada para su entrega (hasta el 13 de mayo de 2020 [14:00]). El material bibliográfico para la correcta elaboración de dicho trabajo está disponible en Aula Virtual desde el 23 de marzo de 2020.



Actividades complementarias: Se suspendió la actividad de trabajo de campo presencial quedando en la entrega del mismo trabajo previsto como memoria, pero con enfoque cartográfico.

3. Metodología docente

Teoría: Se han sustituido las clases presenciales por clases presenciales online. Compactadas en duración según recomendación del rectorado. Se ha proporcionado en el aula virtual la presentación del tema y una tabla con recomendación de lecturas accesibles.

Prácticas: Siguiendo recomendaciones de Rectorado, para evitar superar 1h semanal de clases impartidas por videoconferencia en asignaturas de 6 créditos ECTS, las prácticas de laboratorio quedan sustituidas por un trabajo bibliográfico. La descripción de sus requisitos está disponible en Aula Virtual, así como su tarea habilitada para la entrega y material bibliográfico (dos libros de acceso abierto), la presentación que reúne los contenidos básicos y un documento de apoyo. Su seguimiento se realiza por vía electrónica de lunes a viernes y se mantiene el horario de tutorías donde se responden consultas por mensajería instantánea.

Actividades complementarias: La segunda actividad de trabajo de campo se ha sustituido por un trabajo idéntico al que presentarían si no asistiesen a las prácticas de campo. El trabajo se tutoriza online.

Sistema de Tutorías: Se mantiene el programa de tutorías virtuales por correo electrónico o por chat privado del Aula Virtual y se emplean otras herramientas del Aula Virtual para atender dudas o debates colectivos.

4. Evaluación

Teoría: El examen teórico-práctico será exclusivamente teórico y la parte de la evaluación correspondiente, dentro del examen, a prácticas (10% del examen, 6 % de la nota final) se traslada a la valoración de las prácticas. El examen se realizará en formato test con tiempo limitado y en directo, en la fecha y hora prevista en el calendario; utilizando la sección del aula virtual prevista para ello. El examen equivale así a un 54% de la calificación final. Durante el mes de mayo se realizará un examen de prueba para que los estudiantes se familiaricen con el tipo de examen.

Prácticas: La evaluación de estas se ha incrementado en un 6% (total 26%) al incorporar aquí la parte de prácticas del examen teórico.

Actividades complementarias: La valoración no se ha variado (20%).

5. Bibliografía

Teoría: Se ha reducido a dos manuales accesibles en internet y material dispuesto en el aula virtual. (El servei de biblioteques de la Universitat de València no dispone de manuales de esta asignatura en formato electrónico).



Prácticas: La bibliografía recomendada ha sido subida a Aula Virtual (2 libros) por tratarse de material disponible en acceso abierto (*Open Access*).

Actividades complementarias: Se ha proporcionado la bibliografía en el aula virtual.

