

**COURSE DATA****DATA SUBJECT**

**Code:** 41052  
**Name:** Natural systems and society  
**Cycle:** Master's Degree  
**ECTS Credits:** 14  
**Academic year:** 2025-26

**STUDY (S)**

| Degree  | Center                           | Acad. year | Period        |
|---|----------------------------------|------------|---------------|
| 2001 - Master's Degree in Environmental and Territorial Management Techniques | Facultat de Geografia i Història | 1          | First quarter |

**SUBJECT-MATTER**

| Degree  | Subject-matter              | Character  |
|---|-----------------------------|------------|
| 2001 - Master's Degree in Environmental and Territorial Management Techniques | Natural systems and society | COMPULSORY |

**COORDINATION**

ESCRIBANO PIZARRO JAIME

**SUMMARY**

The module is organised into four parts covering the most important aspects of the subject area:

- Part I: Natural systems and anthropogenic systems, erosion processes in the Mediterranean.
- Part II: New territorial guidelines for urbanisation and Urban planning.
- Part III: Territorial planning, environmental problems and governance.
- Part IV: Territorial planning in practice.

The **first part** is presented as an introduction and update of information as regards the processes taking place in the Mediterranean physical environment and its most important environmental problems, with particular attention to climate change.

The **second part** seeks, on the one hand, to analyze the territorial pattern prevailing today in the



development of large urban spaces, the characteristics of the resulting new real city -the low-density city or dispersed city-, the factors that determine these processes and the important consequences that they have on the territory, in particular those that affect the environment. On the other hand, it is proposed to explain the content, regulation and practice of urban planning.

**The third part** explains the content, regulation and practice of territorial planning, by means of which it is a matter of giving coherence to the territorial planning and development processes that allow facing new territorial problems, challenges and guidelines. The spatial delimitation that territorial and urban planning supposes and the obligations that it establishes with its regulations establish the framework within which the management of a territory must inescapably unfold. Without their knowledge, the proper use of any management technique is not possible.

**The fourth part** carries out, from an applied perspective, a review of both the implementation of territorial planning instruments in the Valencian Community, and the contents that give rise to the concepts and processes of strategic planning applied to territories at scale local, municipal or supra-municipal. Finally, the available tools to incorporate adaptation to climate change in land use planning and in all public policies are analyzed.

## PREVIOUS KNOWLEDGE

## RELATIONSHIP TO OTHER SUBJECTS OF THE SAME DEGREE

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

## OTHER REQUIREMENTS

None

## COMPETENCES / LEARNING OUTCOMES

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Análisis del medio físico de una manera integrada, interrelacionando sus componentes a partir del trabajo de campo y manejo de elementos cartográficos y toma de datos.

Capacidad de realizar la planificación territorial: análisis, diagnóstico y propuestas.

Students should apply acquired knowledge to solve problems in unfamiliar contexts within their field of study, including multidisciplinary scenarios.

Students should be able to integrate knowledge and address the complexity of making informed judgments based on incomplete or limited information, including reflections on the social and ethical responsibilities associated with the application of their knowledge and judgments.

Students should communicate conclusions and underlying knowledge clearly and unambiguously to both



specialized and non-specialized audiences.

Students should demonstrate self-directed learning skills for continued academic growth.

Students should possess and understand foundational knowledge that enables original thinking and research in the field.

## DESCRIPTION OF CONTENTS

### **1. The Mediterranean region: climate change, human action and characterisation**

Sensitivity of natural systems to anthropogenic impact.

Anthropogenic changes in natural systems.

Spatial characterisation of the Mediterranean environment: an environment in transition.

Recent environmental history: an intensification of human action?

Evidence and realities of climate change at global, regional and local level (Valencian Community).

Environmental repercussions.

### **2. Erosion Processes**

Factors, mechanisms, causes and solutions to soil erosion problems.

Measurement and estimation methods and soil erosion models.

Case studies: impact magnitudes of soil erosion.

### **3. The river system. Rivers and wadis. Mediterranean flood plains**

The drainage basin as a morphogenetic system.

Hydrogeomorphological specificity of Mediterranean fluvial systems.

Processes and forms in rivers and wadis.

Evolution of Mediterranean fluvial systems under a context of environmental change.

### **4. Hydrology of the Mediterranean Sea**

The Mediterranean as a concentration basin.



Sea temperature and its role in climate.  
Global warming in the Mediterranean.

## **5. The coastal system**

General. Dynamic agents on the coast. Wind, waves, tides and currents.  
Beaches and coastal arrows. Dynamics, erosion, regeneration measures.  
Dunes. Dynamics and types. Impacts. Restoration methods.  
Barrier islands and micromareal coastal lagoons. Types, evolution models, management patterns.  
River mouths: deltas and estuaries. Water mixing models. Stability of deltas.  
Marshes and estuaries. Dynamics and stability factors. Protection and regeneration of marshes.  
Rocky coasts: typology and dynamics. Cliff stability. Anthropisation of cliffs.  
Sea level variations. Global causes and trends. Adaptation methods.

## **6. New territorial guidelines for urbanization**

The stages of the urbanisation process in Europe and Spain. Urban sprawl (diffuse urbanisation) and the low-density city. Characteristics of the low-density city.  
Current trends and perspectives.  
New tools for the study of the urbanisation process: Is it possible to predict urban growth?

## **7. Urban planning and management**

Urbanism as a public service. Urban planning and management. The distribution of constitutional powers  
General planning. The physical model: main determinations, concept and meaning. Management model  
Planning of development. Types and objectives. Partial plans and internal reform plans  
The delimitation of urban development. The debate on developable land. The valuation of undeveloped land and its regulation.

## **8. Territorial planning, environment and governance**

Why spatial planning is necessary: key elements from experience.  
A review of territorial planning from the contextual (values and narratives such as climate change and ecological transition), the procedural (overcoming the labyrinth) and the substantive (what objective?).



From planning instruments to management; the challenge of implementation and evaluation.  
Towards a new territorial and not only functional governance: what does it mean; is it possible; how?  
Case studies and examples of good practice and conflicts.

## 9. Territorial planning in practice

The instruments of territorial planning in the Valencian Community: legal and political aspects.  
Concepts and processes of Participatory Strategic Planning (PEP) applied at local, municipal or supra-municipal level.  
Practical examples.

## 10. Territorial policies for adaptation to climate change

Climate change on the Spanish Mediterranean coast: scientific evidence.  
Territorial impact of climate change and atmospheric extremes.  
The need to adapt planning (economic, hydrological, emergency, spatial planning) to the effects of climate change.  
Incorporation of climate change and climate risks in spatial planning: tools and experiences.  
Public processes and policies. Institutional context and governance models in the 2030 horizon.

### WORKLOAD

#### PRESENCIAL ACTIVITIES

| Activity            | Hours        |
|---------------------|--------------|
| Tutorials           | 4,00         |
| Theory              | 60,00        |
| Seminar             | 5,00         |
| Other activities    | 12,00        |
| Classroom practices | 5,00         |
| <b>Total hours</b>  | <b>86,00</b> |

#### NON PRESENCIAL ACTIVITIES

| Activity                              | Hours         |
|---------------------------------------|---------------|
| Attendance at other activities        | 0,00          |
| Individual or group project           | 100,00        |
| Independent study and work            | 100,00        |
| Preparation of lessons                | 0,00          |
| Preparation for assessment activities | 64,00         |
| Resolution of case studies            | 0,00          |
| <b>Total hours</b>                    | <b>264,00</b> |



## TEACHING METHODOLOGY

The subject will be taught through a combination of some or all of the following training activities:

### 1. Classroom lectures

Explanation of the basic content of the course. Usual teaching resources such as presentations, images of different environments, graphics and diagrams are used. All material used in class is available to students in the virtual classroom. In addition, students will be advised to read specific literature to complement the information provided in class.

### 2. Fieldwork

Two field trips will be organised. This activity is mainly aimed at putting the student into contact with the reality of the Mediterranean physical environment.

### 3. Readings of texts

Texts, documents and plans will have to be read individually, before or after attending the lessons, as appropriate, for a better understanding of the contents, to facilitate participation and debate and to prepare possible written essays.

### 4. Individual written assignments

These will be based on the reading of texts about some topics included in the syllabus. The annex to the annual programme will specify the content, format and conditions.

### 5. Group assignment

This is to be prepared in groups to apply all or part of the concepts studied during the course to a particular territorial space.

The annex to the annual programme will specify the content, format and conditions.

### 6. Tutorials

Two types of tutorials will be offered: individual to help clarify concepts and theory, and in groups to direct the preparation of the practical assignment.

## EVALUATION



The final grade will be based on the following items:

- a) Continuous attendance to face-to-face classes (minimum 80% attendance).
- b) Exam: 10%
- c) Evaluation of work (theoretical and practical): 50%.
- d) Complementary activities (field trips, mainly, but not exclusively -see details in the Annex of the Teaching Guide-): 40%.

Regarding the evaluation and qualification, the appropriate rules will be followed as reflected in Chapter VI of the Regulations of evaluation and qualification of the Universitat de València for bachelor's and master's degrees. ACGUV 108/2017 ([http://www.uv.es/graus/normatives/2017\\_108\\_Reglament\\_avaluacio\\_qualificacio.pdf](http://www.uv.es/graus/normatives/2017_108_Reglament_avaluacio_qualificacio.pdf)).

Regarding the plagiarism of any of the works requested in the framework of this module, the CEC approves, in the meeting of 26 March 2024, that the deliveries with 20% or more of plagiarism will be suspended.

We also recommend accessing and reading the Protocol of action against fraudulent practices at the Universitat de València. ACGUV 123/2020 (<https://www.uv.es/sgeneral/Protocols/C83sp.pdf>).

## REFERENCES

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Camarasa-Belmonte, A. M. (2016). Flash floods in Mediterranean ephemeral streams in Valencia Region (Spain). *Journal of Hydrology*, 541, 99-115.

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Esteban, J. (2003). *La ordenación urbanística: concepto, herramientas y prácticas*. Electa.

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- Farinós, J., y Olcina, J. (2022). *Ordenación del Territorio y Medio Ambiente*. Tirant lo Blanch.
- Fernández, G. R. (2011). *Para comprender el urbanismo español (de una vez por todas)*. Iustel.
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- López, M. J. (2021). ¿Cuánto se está calentando el Mediterráneo? Treinta y cinco años de observaciones desde satélite. *Metode Science Studies Journal*, 11, 193-199, <https://doi.org/10.7203/metode.11.16693>
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**Complementary:**

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variability in eastern Spain under climate change. *Atmospheric Research*, (290), 106795.

Bethoux J. P., B. Gentili, P. Morin, E. Nicolas, C. Pierre, y D. Ruiz-Pino (1999). The Mediterranean Sea: A miniature ocean for climatic and environmental studies and a key for the climatic functioning of the North Atlantic. *Progress in Oceanography*, 44, 131-146.

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