

Resource Management and Planning

Code: 102830
ECTS Credits: 9

Degree	Type	Year	Semester
2501915 Environmental Sciences	OB	3	1

The proposed teaching and assessment methodology that appear in the guide may be subject to changes as a result of the restrictions to face-to-face class attendance imposed by the health authorities.

Contact

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Use of Languages

Principal working language: catalan (cat)
Some groups entirely in English: No
Some groups entirely in Catalan: Yes
Some groups entirely in Spanish: No

Other comments on languages

Some of the teaching materials and readings will be in English

Teachers

Nuria Valdovinos Perdices
Marc Castelló Bueno

Prerequisites

To take this subject it is necessary to have passed the following basic and compulsory training subjects:

- Environment and Society
- Cartography and Image Interpretation
- Environmental Administration and Policies

On the other hand, during the course concepts and knowledge previously acquired in the subjects of basic and compulsory training will be used:

- Human uses of the earth system
- Introduction to law
- Environmental law
- Environmental economics and natural resources

Finally, students must have a sufficient level of English to understand scientific texts.

Objectives and Contextualisation

Contextualization

This is a subject that is especially relevant for the degree, not only because of its weight in itself (compulsory subject of 9 ECTS credits) but also because it offers contents of great interest for the formation of any environmental scientist. Environmental Sciences must serve to know, analyze and, above all, solve the environmental problems faced by our society. Understanding the socio-environmental dynamics of the territory and the natural resources it contains is of great interest in order to correctly analyse many of today's environmental problems. Similarly, the relevance of this subject is not only determined by what it provides at the analytical level, but above all, by its deepening in different instruments of intervention that, from management and public policies, can be used as tools to respond to these problems. In this sense, therefore, the subject has an analytical character with a marked applied and professional approach.

Situated in the 3rd year of the Study Plan, the subject aims to integrate the knowledge of the different disciplines that the students have acquired up to now and, at the same time, to serve as the basis for many of the specialisation subjects (of the three mentioned) that will be taken in the 4th year.

The subject is integrated into the subject "Geography for Environmental Sciences". In this context, the correct use of the techniques of cartography and image interpretation is essential to achieve the objectives of the subject which has an interdisciplinary profile and is closely related to many other subjects of the Degree such as Geography, Biology for Environmental Sciences, Legal Instruments for Environmental Sciences, and Economics for Environmental Sciences. On the other hand, the subject offers a whole series of basic knowledge that will be very useful for students who want to take both the optional subjects of the same subject (Energy and Society, Modelling and Analysis of Geographic Information, Development and Planning of Rural and Urban Landscapes, Geography of the Coast) and the following subjects of other subjects: Environmental Evaluation of Plans and Programmes, Traditional Economy, Applied Ecology, Environmental Education and Communication, Treatment and Management of Urban and Consumer Waters, Renewable and Non-Renewable Energies and Waste Management, Treatment and Valorisation.

Overall objective

Using reference of the Catalan territorial scope, this subject has as main objective for the students to be able to analyze the socio-environmental dimension of the territorial dynamics, to know the main instruments of public intervention for the planning and the management of the territory and its resources and, finally, to develop the necessary skills to be able to provide environmentally optimal and socially just solutions to the territorial problems of our times.

Specific objectives

At the end of the course the student should be able to:

- Argue the need to organize and plan the territory.
- Identify geographic processes in (and between) urban settlements and open space.
- Characterize the phenomenon of global environmental change and its territorial dimension.
- Explain the historical and recent changes in the territory and in the landscape through the relations between nature and society.
- Describe the different functional and morphological elements of the city.
- Explain and critically analyze the socio-environmental dynamics that occur in cities and in open space.
- Recognize the main territorial dynamics of Catalonia and Spain.
- Interpret the physical, economic, social and cultural diversity of the (and between) different territories.
- Identify and characterize the different management models of natural resources applied to water, energy, forests and waste.
- Diagnose the weaknesses, threats, strengths and opportunities of a given territory and its resources.
- Integrate the different dimensions of sustainability (environmental, economic, political and social) to analyze the problems of a specific territory and its resources.
- Use and relate the different scales to analyze the problems of a certain territory and its resources.

- Use different cartographic tools applied to urban and territorial planning.
- Describe and interpret the legal and administrative framework of urban, territorial and landscape policies in Catalonia.
- Describe interpreting the legal and administrative framework applicable to the management of the following resources: water, energy, forests and waste.
- Identify the different urban and territorial planning instruments that exist in Catalonia and describe both their characteristics and usefulness.
- Interpret the different documents of an urban or territorial plan (reports, regulations, information plans, planning plans, environmental sustainability report, etc.)
- Characterize the different figures for the protection of natural spaces in Catalonia and Spain, as well as the different instruments for their planning and management.
- Evaluate the main environmental impacts and benefits of a specific territorial or urban plan.
- Critically criticize the environmental, urban and territorial policies of different levels of public administration.
- Raise different measures of public intervention for the resolution of diverse territorial problems.
- Propose creative, adequate and viable solutions for the resolution of diverse territorial problems.
- Analyze and solve environmental problems of a territorial nature through cooperative work.
- Propose measures for the management of the following resources: water, energy, forests and waste.
- Propose management and management measures for protected natural spaces.
- Propose measures for the preservation, management and landscape integration.

Competences

- Adequately convey information verbally, written and graphic, including the use of new communication and information technologies.
- Analyze and use information critically.
- Collect, analyze and represent data and observations, both qualitative and quantitative, using secure adequate classroom, field and laboratory techniques
- Demonstrate adequate knowledge and use the tools and concepts of the most relevant social science environment.
- Demonstrate concern for quality and praxis.
- Demonstrate initiative and adapt to new situations and problems.
- Develop analysis and synthesis strategies regarding the environmental implications of industrial processes and urban management
- Quickly apply the knowledge and skills in the various fields involved in environmental issues, providing innovative proposals.
- Teaming developing personal values regarding social skills and teamwork.
- Work autonomously

Learning Outcomes

1. Adequately convey information verbally, written and graphic, including the use of new communication and information technologies.
2. Analyze and interpret environmental problems for territorial planning.
3. Analyze and interpret environmental problems to deepen the territorial diagnosis and the changes to the landscape.
4. Analyze and synthesize the environmental implications of planning and land management.
5. Analyze and use information critically.
6. Apply mapping tools, including geographical information systems.
7. Demonstrate concern for quality and praxis.
8. Demonstrate initiative and adapt to new situations and problems.
9. Identify geographic processes in the environmental surroundings and to value properly and originally.
10. Know and apply the most relevant methodologies in the planning.
11. Know the main territorial and landscape dynamics in Catalonia and Spain.
12. Rate changes the landscape through spatial relationships on different territorial stairs through the relationships between nature and society.

13. Recognize and explain the spatial relationships at different territorial stairs, physical, economic, social and cultural diversity of the territories.
14. Teaming developing personal values regarding social skills and teamwork.
15. The main features of the so called global change.
16. Undertake spatial relationships on different territorial stairs through the relationships between nature and society in the field of territorial planning.
17. Work autonomously

Content

SECTION I. SPATIAL PLANNING AND CONTEMPORARY TERRITORIAL DYNAMICS

- Topic 1. The territory in the era of the Antropocene: the need for planning and management.
- Topic 2. Socio-environmental analysis of cities: sustainability, resilience and climate change (towards the 'climate-proof city').
- Topic 3. Socio-environmental analysis of the open spaces: fragmentation, connectivity and adaptation (towards the new 'green metropolitan infrastructure').

SECTION II. THE 'TOOL-BOX' FOR URBAN AND SPATIAL PLANNING INTERVENTION

- Topic 4. The territorial planning: general overview on its evolution and the present day main challenges from the resources planning/management perspective.
- Topic 5. The urban planning: general overview on its evolution and the present day main challenges from the resources planning/management perspective.
- Topic 6. The strategic planning: general overview on its evolution and the present day main challenges from the resources planning/management perspective.

SECTION III. THE RESOURCES PLANNING AND MANAGEMENT

- Topic 7. Protection and management of the natural environment: from the conservation paradigma to the territorial integrated management.
- Topic 8. Water planning and management: from the territorial balance paradigma to the strategic management of a key resource against climate change.
- Topic 9. Energy, transportation and mobility planning and management: from the 'oil city' paradigma to the 'post-oil' territory.
- Topic 10. Waste management: from the finalist paradigm 'from the city' to the circular management of processus transforming territories.

Methodology

"The teaching methodology and evaluation proposed in the guide may undergo some modification depending on the restrictions on attendance imposed by the health authorities"

The teaching activities of the subject will be structured as follows:

Theory classes (1 group)

- Lectures: given by the teacher encouraging debate and student participation.
- Exercises directed in the classroom: Exercises based on the active participation of students (usually through informal cooperative work) that will not require prior work.
- Cooperative work with preparation. Different formal cooperative work activities will be carried out based on the previous work of the students (readings or practical cases). It is estimated that the students must allocate a total of 5h the preparation of those activities (supervised activity).
- Oral presentations: some sessions will be devoted to the presentation by the students, of a topic based on diverse materials (territorial conflicts, plans or projects, good environmental management practices,

etc.). In each session two groups of students will present their presentation and these will be discussed with the rest of the class.

Classes of problems (2 groups)

- Group work: For groups, students must choose a municipality. Throughout the course, and through formal cooperative work, they must make a territorial and environmental diagnosis of the municipality in question, analyze the main problems and, finally, propose action measures to solve these problems. Students must make several partial deliveries and a final delivery in the form of work. The follow-up and the direction of the work will be done through 10 sessions in the classroom in class of problems and group tutorials. It is estimated that each student will spend 20 hours in group work outside the classroom (supervised activity).

Field trips (4 groups)

- There will be 2 field trips. Attendance is a prerequisite to be able to be evaluated for the field trips. Each student should write a short article based on one of the two outputs. It is estimated that each student will dedicate 8 hours to the writing of the article (supervised activity).

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Classroom exercise (in theory classes)	6	0.24	3, 2, 4, 5, 10, 8, 7, 9, 13, 1, 14
Cooperative work with preparation (Theory classes)	10	0.4	3, 2, 4, 5, 6, 15, 11, 8, 7, 13, 1, 17
Field trips	10	0.4	3, 2, 4, 5, 6, 10, 15, 11, 8, 7, 16, 9, 1, 12
Lectures (on theory)	22	0.88	5, 10, 15, 11, 16, 9, 13, 1, 12
Seminars	15	0.6	
Student presentations (theory classes)	12	0.48	4, 5, 7, 1, 14
Type: Supervised			
Fieldwork	8	0.32	3, 2, 4, 5, 6, 10, 15, 11, 8, 7, 16, 9, 1, 12
Group tutorials	2	0.08	4, 5, 8, 7, 14
Group work	20	0.8	3, 2, 4, 5, 6, 10, 8, 7, 9, 1, 14, 12
Preparation of activities in the classroom (readings and cases)	5	0.2	3, 2, 4, 5, 6, 15, 11, 8, 7, 13, 17
Type: Autonomous			

Free individual tutorials	3	0.12	7, 17
Individual study	65	2.6	5, 10, 15, 11, 16, 9, 13, 17, 12
Information search	20	0.8	8, 17
Reading	25	1	3, 2, 15, 11, 13, 17

Assessment

"The teaching methodology and evaluation proposed in the guide may undergo some modification depending on the restrictions on attendance imposed by the health authorities"

- There will be a continuous evaluation of 2 partial exams. Students who so wish may be re-evaluated from any of the midterms, either to pass if they have failed or to raise their grades.
- The grade of the group work (multiplied by the number of members of the group) will be distributed among the students of the group according to their own agreement. If they do not notify the form of distribution or there is no agreement between them then the note will be distributed equally.
- The note of the activities with preparation will be group and will respond to the average of the grades obtained in the exercises of the different activities carried out in the theory classes.
- The mark of the lectures in class will be obtained from the evaluation made by the students of other groups at the end of the session. Participating in two evaluations is a prerequisite for being scored in this part of the subject.
- The outings will be evaluated by means of an applied activity.
- The participation will be evaluated from a) different deliveries that will be carried out in the activities directed in the classroom throughout the course and b) the oral interventions of the students in the different sessions throughout the course.
- In order to pass the subject it is necessary to pass both the group work and the average of the 2 partial exams. Failure to attend any of the partial exams will be considered as a "not presented" in the whole of the subject, even if the work is delivered in group. Presenting oneself to the 2 exams and suspending them (the average) will imply obtaining the grade of "suspended" in the whole of the subject, even if the work is not delivered in group. On the other hand, if it passes the average of the 2 exams but the work is not delivered in group, then the qualification will be of "not presented".
- Examinations and group work can be re-evaluated, other activities cannot be re-evaluated.
- Only those students who have evaluated a minimum of 2/3 of the evaluation activities during the course are eligible for make-up. The make-up will consist of the repetition of those suspended and revaluable activities (exams and group work) that the student wants to reevaluate.

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Exams	40%	2	0.08	2, 4, 10, 15, 11, 8, 16, 13, 1, 17, 12
Fieldwork	10%	0	0	3, 2, 4, 5, 6, 10, 15, 11, 8, 7, 16, 9, 1, 14, 12
Group work	30%	0	0	3, 2, 4, 5, 6, 10, 8, 7, 9, 1, 14, 12
Participation	5%	0	0	5, 8, 7, 1, 17, 14
Preparation activities	5%	0	0	3, 2, 4, 5, 10, 15, 11, 8, 16, 9, 13, 1, 17, 14
Presentations	10%	0	0	4, 5, 7, 1, 14

Bibliography

Bibliography

- AAVV (2000). *Sistema municipal d'indicadors de sostenibilitat*. Barcelona: Diputació de Barcelona.
- AAVV (2008). *Ciudades en (re)construcción: necesidades sociales, transformación y mejora de barrios*. Barcelona: Diputació de Barcelona.
- ASCHER, F. (2004). *Los nuevos principios del urbanismo*. Madrid: Alianza.
- BRU, J. (2000). *Medi ambient i intervenció en el territori. Bases formatives i nous recursos per al treball interdisciplinari*. Barcelona: Generalitat de Catalunya, Departament de Medi Ambient.
- CANAL, R. (2013). *Ciudades y pueblos que pueden durar. Políticas locales para una nueva época*. Barcelona: Icària
- CHAMBERLIN, S. (2009). *The transition timeline for a local, resilient future*. Vermont: Chelsea Green.
- ESTEBAN, J. (2011). *La ordenación urbanística: conceptos, herramientas y prácticas*. Barcelona: Universitat Politècnica de Catalunya.
- ESTEVA, A.; NAREDO, J. M. (2004). *Ideas y propuestas para una nueva política del agua en España*. Bilbao: Bakeaz.
- EUROPARC-ESPAÑA. (2011). *Herramientas para la Evaluación de las áreas Protegidas: Modelo de Gestión*. Serie Manuales EUROPARC. Manual nº 8.
- FERNÁNDEZ DURÁN, R. (2006). *El Tsunami urbanizador español y mundial*. Bilbao. Marcial Pons.
- FOLCH, R. (coord.) (2003). *El territorio como sistema. Conceptos y herramientas de ordenación*. Barcelona: Diputació de Barcelona.
- GALIANA, L.; VINUESA, J. (2010). *Teoría y práctica para una ordenación racional del territorio*. Madrid: Síntesis.
- GIFREU, J. (2012). *L'ordenació urbanística a Catalunya*. Barcelona: Marcial Pons.
- HOPKINS, R. (2008). *The transition handbook: from oil dependency to local resilience*. Vermont: Chelsea Green.
- MATA, R.; TARROJA, À. (2006). *El paisaje y la gestión del territorio*. Barcelona: Diputació de Barcelona.
- MOYA, L. (ed.). (2011). *La práctica del urbanismo*. Madrid: Síntesis.
- MUÑOZ, F. (2008). *Urbanización. Paisajes comunes, lugares globales*. Barcelona: Gustavo Gili.
- MUÑOZ, F. (coord.) (2011). *Estratègies vers la ciutat de baixa densitat: de la contenció a la gestió*. Barcelona: Diputació de Barcelona.
- NEL·LO, O. (dir.) (2010). *La política de paisatge a Catalunya*. Barcelona: Departament de Política Territorial i Obres Públiques.
- NEL·LO, O. (2012). *Ordenar el territorio. La experiencia de Barcelona y Cataluña*. València: Tirant lo Blanch.
- ORTEGA, M.; CERDÀ, LI. (2005). *Gestió local de la mobilitat sostenible i segura*. Barcelona: Fundació Pi i Sunyer.
- PUIG, I. (2006). *Polítiques locals per a la reducció dels residus municipals*. Barcelona: Fundació Pi i Sunyer.

PUJADAS, R.; FONT, J. (2007). *Ordenación y planificación territorial*. Madrid: Síntesis.

RIBA, C. (2011). *Recursos energètics i crisi. La fi de 200 anys irrepetibles*. Barcelona: Universitat Politècnica de Catalunya.

RIDDELL, R. (2004), *Sustainable Urban Planning*. Oxford: Blackwell.

SALADIÉ, O.; OLIVERAS, J. (2010). *Desenvolupament sostenible*. Tarragona. Publicacions URV.

SANJUÁN, M. (2005). *Gestió local de l'aigua*. Barcelona: Fundació Pi i Sunyer.

SATTERTHWAITE, D. (2001). *Sustainable Cities*. London: Earthscan Publications.

TERRADES, J. (2001). *Ecologia Urbana*. Barcelona: Rubes.

TURIEL, A, (2020) *Petrocalipsis. Crisis energética global y cómo (no) la vamos a solucionar*. Ed. Alfabeto.

World Cities Report (2016). *Urbanization and Development. Emerging Futures*. UNHABITAT.

World Cities Report (2020). *The Value of Sustainable Urbanization*. UNHABITAT.

Software

There is no requirement in regard with advanced software knowledge. User's basic knowledge is required in regard with texts edition, excel files or ppt files or similar for preparing digital presentations.