

Gestió de l'Aigua, l'Energia i el Territori

2015/2016

Codi: 43063

Crèdits: 9

Titulació	Tipus	Curs	Semestre
4313784 Estudis Interdisciplinaris en Sostenibilitat Ambiental, Econòmica i Social	OT	0	2

Professor de contacte

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Utilització de llengües

Llengua vehicular majoritària: anglès (eng)

Equip docent

Juan López Redondo

Prerequisites

Oral and written English skills

Objectius

The module pretends to introduce students to current debates on the management of water and energy resources, emphasizing the territorial dimension. An attempt will be made to collect case studies at different scales in different areas of the world on these issues although a certain Mediterranean focus is to be expected.

The course will pay special attention to contrasting conventional management models based on centralized technologies, expert approaches and "top-down" management, with more alternative resources, decentralized technologies and a participatory processes open to larger segments of society. Both models will be compared in terms of governance and power networks. Another very important element of the course will be the analysis of territorial conflicts arising in the operation of these management models.

Through readings of selected materials, presentations by instructors (and by invited guests) and class presentations and discussions, students are expected to gain a basic, robust knowledge on water and energy issues from environmental, social, and territorial perspectives.

Competències

- Aplicar els coneixements d'economia ambiental i ecològica a l'anàlisi i a la interpretació de problemàtiques ambientals.
- Que els estudiants sàpiguin aplicar els coneixements adquirits i la seva capacitat de resolució de problemes en entorns nous o poc coneguts dins de contextos més amplis (o multidisciplinaris) relacionats amb la seva àrea d'estudi.
- Que els estudiants siguin capaços d'integrar coneixements i enfrontar-se a la complexitat de formular judicis a partir d'una informació que, tot i ser incompleta o limitada, inclogui reflexions sobre les responsabilitats socials i ètiques vinculades a l'aplicació dels seus coneixements i judicis
- Treballar en un context internacional i multidisciplinari

Resultats d'aprenentatge

1. Conèixer diferents models de gestió de l'aigua i de l'energia, especialment pel que fa a la dimensió territorial.
2. Conèixer i comprendre els principals conflictes territorials i socioambientals vinculats amb la gestió de l'aigua i de l'energia.
3. Conèixer i comprendre noves formes de governança de l'aigua i de l'energia.
4. Que els estudiants sàpiguin aplicar els coneixements adquirits i la seva capacitat de resolució de problemes en entorns nous o poc coneguts dins de contextos més amplis (o multidisciplinaris) relacionats amb la seva àrea d'estudi.
5. Que els estudiants siguin capaços d'integrar coneixements i enfrontar-se a la complexitat de formular judicis a partir d'una informació que, tot i ser incompleta o limitada, inclogui reflexions sobre les responsabilitats socials i ètiques vinculades a l'aplicació dels seus coneixements i judicis
6. Treballar en un context internacional i multidisciplinari

Continguts

Introduction to the course, organization and distribution of the readings by topic. Lecture: The water-energy nexus

The governance of large conventional hydraulic technology : reservoirs and water transfers

The governance of large alternative hydraulic technology: desalination and water reuse

The change of scale. Governance of decentralized water resources: groundwater, greywater and rainwater

Managing water demand: technology vs economy

Managing water demand: the behavioral component

Managing water demand: the role of structural factors

Integrated water management in cities: the liberal view

Integrated water management in cities: the emancipatory view

Energy efficient Territories: land use and social metabolism

Fossil energy sources, "peak oil" and climate change

Energy security and risk management: nuclear energy and social movements

Renewable Energy I: solar and wind energy

Renewables II: biological energy

Electricity governance: production, distribution and marketing

Final energy consumption: Towards a demand management

Social innovation and local development: cities in transition and energy cooperatives

Conclusions: synthesis and comparative analysis of management models of water and energy resources

Metodologia

The class will adopt a seminar format structured as follows:

-Introduction to the topic by the instructor (or invited speaker)

-Questions about the lecture

-Student presentations of assigned readings or specific practical exercises

-Group discussion of readings and/or exercises

-Conclusion with main lessons learned

Students are expected to read the assigned materials; prepare and guide discussions and participate actively in the debates as well as engage in the solving of practical exercises.

Activitats formatives

Títol	Hores	ECTS	Resultats d'aprenentatge
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Tipus: Dirigides

Case studies	12	0,48
Lectures	10	0,4
Oral presentation	7	0,28
Seminars	25	1

Tipus: Supervisades

Preparation of oral presentations	4	0,16
Readings	40	1,6
Resolution of case studies	10	0,4
Tutorials	6	0,24

Tipus: Autònomes

Personal study	25	1
Preparation of papers	45	1,8
Readings	35	1,4

Avaluació

The final grade will be composed by the grade obtained in the water part and the grade obtained in the energy part (both 50% of the total)

In the water part the grade will be based on

Take home exam (75%)

Student participation in class, including preparation and presentation of assigned readings (25 %)

In the energy part, the grade will be based on

Active participation in class (10%)

Resolution of practical exercises (90%)

Students failing to pass the course under the criteria above will be given the opportunity of an extra exam

Activitats d'avaluació

Títol	Pes	Hores	ECTS	Resultats d'aprenentatge
Examen	40%	2	0,08	1, 2, 3, 4, 5, 6
Exercicis practics	40 %	2	0,08	1, 2, 3, 4, 5, 6
Participació a classe	20 %	2	0,08	1, 2, 3, 4, 5, 6

Bibliografia

Bibliography (Water)

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- Bibliography (Energy)**
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- (A more comprehensive reading list will be distributed at the beginning of each part)