Gestió de l'Aigua, l'Energia i el Territori 2014/2015

Code: 43063
ECTS Credits: 9

Degree	Type	Year	Semester
4313784 Estudis Interdisciplinaris en Sostenibilitat Ambiental, Econòmica i Social	OT	0	2

Contact

Name: David Saurí Pujol
Email: David.Sauri@uab.cat

Use of languages

Principal working language: anglès (eng)
Some groups entirely in English: No
Some groups entirely in Catalan: Yes
Some groups entirely in Spanish: No

Prerequisites

Oral and written English skills

Objectives and Contextualisation

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 tecnologies, 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 another very important element of the course will be the analysis of the territorial conflicts arising in the application of these management models.

Through readings of selected materials, presentations by instructors (and occasionally by invited guests) and class presentations and discussions students are expected to gain a basic, robust knowledge on water and energy alternatives and of their diferent governance frameworks.

Skills

- Apply knowledge of environmental and ecological economics to the analysis and interpretation of environmental problem areas.
- Integrate knowledge and use it to make judgements in complex situations, with incomplete information, while keeping in mind social and ethical responsibilities.
- Que els estudiants sàpiguen 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.
- Work in an international, multidisciplinary context.

Learning outcomes

1. Conèixer diferents models de gestió de laigua i de lenergia, especialment pel que fa a la dimensió territorial.

2. Conèixer i comprendre els principals conflictes territorials i socioambientals vinculats amb la gestió de laigua i de lenergia.
3. Conèixer i comprendre noves formes de governança de laigua i de lenergia.
4. Integrate knowledge and use it to make judgements in complex situations, with incomplete information, while keeping in mind social and ethical responsibilities.
5. Que els estudiants sàpiguen 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.
6. Work in an international, multidisciplinary context.

Content

Introduction to the course, organization and distribution of the readings by topic. Lecture: The water-energy nexus
The governance of large conventional hydraulic technology : reservoris 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

Methodology

The class will follow a seminar format consistint first on a brief introduction to the specific topic given by the instructor followed by the presentation of course work (assigned readings) by students, the group discussion of the main points discussed in the readings, and a final conclusion coordinated by the instructor. In some sessions we will have an invited speaker. Students are expected to read the assigned materials; prepare and guide discussions and participate actively in the debates

Activities

Title	Hours	ECTS	Learning outcomes
Type: Directed			
	7	0.28	
	10	0.4	
	12	0.48	
	25	1	
Type: Supervised			
	4	0.16	

	6	0.24
	10	0.4
	40	1.6
Type: Autonomous		
	25	1
	35	1.4
	45	1.8

Evaluation

Active participation in class (25%)
Oral presentations (25%)
Resolution of cas estudies (10%)
Paper to be discussed with instructors (40%)

Evaluation activities

Title	Weighting	Hours	ECTS	Learning outcomes
		2	0.08	1, 2, 5
		2	0.08	1, 2, 5
		2	0.08	1, 2, 3, 4, 5
		0	0	1, 2, 3, 4, 5, 6

Bibliography

Bibliography (Water)
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European Environment Agency. 2009. Water resources across Europe-confronting water scarcity and drought. EEA Rep. No. 2/2009, EEA, Copenhagen
Fielding KS, Russell S, Spinks A, Mankad A. 2012. Determinants of household water conservation: the role of demographic, infrastructure, behavior and psychosocial variables. Water Resources Research 48(10)
Inman D, Jeffrey P. 2006.A review of residential water conservation tool performance and influences on implementation effectiveness. Urban Water Journal 3: 127-43.
Prud'homme A. 2011. The Ripple Effect: The Fate of Freshwater in the Twenty-First Century. New York: Scribner
Renwick ME, Archibald SO. 1998. Demand side management policies for residential water use: Who bears the conservation burden? Land Economics 74:343-59.
Sauri, D. 2013: Water Conservation: Theory and Evidence in Urban Areas of the Developed World Annual Review of. Environment and Resources38:1-22.

Sultana, F. and Loftus, A (eds) 2012 The right to Water. Politics, governance and social struggles. London: Earthscan.
Swyngedouw, E. Social Power and the Urbanization of water Oxford: Oxford University Press
Troy P, ed. 2008. Troubled Waters: Confronting theWater Crisis in Australian Cities. Canberra, Australian University Press
UNESCO. 2012. The UN World Water Development Report: Managing Water under Uncertainty and Risk. Paris: UNESCO
Willis RM, Stewart RA, Panuwatwanich K, Williams PR, Hollingsworth AL. 2011. Quantifying the influence of environmental and water conservation attitudes on household end use water consumption. Journal of Environmental Management 92:1996-2009
World Economic Forum. 2011. Water Security. TheWater-Food-Energy Nexus.Washington, DC: Island.
Yudelson J. 2010. Preventing the Next Urban Water Crisis. Gabriola Island, BC: New Society
Bibliography (Energy)
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Boyle, G. (Ed.). 2004. Renewable energy: power for a sustainable future. Osford: Oxford University Press.
Boyle, G. (Ed.). 2007. Renewable electricit & the grid: the challenge of variability. London: Earthscan Publications.
Boyle, G.; Everett, B. I Ramage, J. (Eds.). 2003. Energy systems and sustainability. Oxford: Oxford University Press.
Droege, P. (Ed.). 2008. Urban energy transition: from fossil fuels to renewable power. Amsterdam: Elsevier.
Patterson, W. 2007. Keeping the light son: towards sustainable electricity. London: Earthscan.
Perlin, J. 1999. From Space to Earth: the story of solar electricity.. AATEC Publications.
Scheer, H. 2011. Imperativo energético. Barcelona: Icària
Scheer, H. 2009. Autonomía energética. Barcelona: Icària
(A more comprehensive readinglist will be distributed at the beginning of each part)