

Degree	Type	Year	Semester
4313784 Interdisciplinary Studies in Environmental, Economic and Social Sustainability	OT	0	2

Contact

Name: Marc Parés

Email: Marc.Pares@uab.cat

Use of languages

Principal working language: english (eng)

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 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 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 different 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.
- Solve problems in new or little-known situations within broader (or multidisciplinary) contexts related to the field of study.
- Work in an international, multidisciplinary context.

Learning outcomes

1. Integrate knowledge and use it to make judgements in complex situations, with incomplete information, while keeping in mind social and ethical responsibilities.
2. Know different models for managing water and energy, especially at the regional level.
3. Solve problems in new or little-known situations within broader (or multidisciplinary) contexts related to the field of study.
4. Understand new forms of water and energy governance.

5. Understand the main territorial, social and environmental conflicts associated with water and energy management.
6. Work in an international, multidisciplinary context.

Content

1. Planning, water and energy

- Nature, society and power
- Planning and management
- The water-energy nexus

2. Water and energy supply

- Large conventional hydraulic technology: reservoirs and water transfers
- Large alternative hydraulic technology: desalination and water reuse
- Fossil energy sources, "peak oil" and climate change
- Energy security and risk management: nuclear energy and social movements
- Renewal energy: solar, wind and biological energy

3. Water and energy demand

- Technology vs economy
- The behavioral component
- The role of structural factors

4. The politics of scale

- Scalar effects and multilevel governance
- Centralized and decentralized models
- Governance of decentralized water resources: groundwater, greywater and rainwater
- Electricity governance: production, distribution and commercialization

5. Commodification, social protection and emancipation

- Privatization and municipalization
- Water and energy as social needs
- Governance of the commons and governance as commons
- Integrated water management in cities: the liberal vs the emancipatory view
- Social innovation and local development: cities in transition and energy cooperatives

Methodology

The following activities will be carried out:

a) Lectures. In some sessions we will have an invited speaker.

b) Seminars: a brief introduction to the specific topic given by the instructor followed by the presentation of assigned readings by students, the group discussion of the main points discussed in the readings, and a final conclusion coordinated by the instructor. Students are expected to read the assigned materials; prepare and guide discussions and participate actively in the debates.

c) Case studies: a case study or a practical exercise will be presented and the students will have to solve it.

Activities

Title	Hours	ECTS	Learning outcomes
Type: Directed			
Preparation of oral presentations	10	0.4	
Readings	25	1	
Resolution of case studies	12	0.48	
Seminars	7	0.28	
Type: Supervised			
Personal study	6	0.24	
Preparation of papers	10	0.4	
Readings	40	1.6	
Tutorials	4	0.16	
Type: Autonomous			
Case studies	25	1	
Lectures	35	1.4	
Oral presentations	45	1.8	

Evaluation

Exam: take home exam at the end of the course

Practical exercises: to be solved at class.

Oral presentation: from the assigned readings.

Participation: participation at seminar debates

Evaluation activities

Title	Weighting	Hours	ECTS	Learning outcomes
Class participation	10 %	0	0	3, 1

Exam	60%	2	0.08	2, 5, 4, 1
Oral presentation	15%	2	0.08	2, 5, 4, 1, 6
Practical exercises	15%	2	0.08	3, 1, 6

Bibliography

Bibliography (Water)

- Bakker K. 2010 Privatizing Water. Governance Failure and the World's Urban Water Crisis. Ithaca, NY: Cornell Univ. Press
- Baumann DD, Boland JJ, Hanemann WM. 1998. Urban Water Demand Management and Planning. New York: MacGraw Hill
- Buzar S, Ogden PE, Hall R. 2005. Households matter: the quiet demography of urban transformation. *Progress in Human Geography* 29(4):413-36
- 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 Resources* 38:1-22.
- 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 the Water 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. The Water-Food-Energy Nexus*. Washington, DC: Island.
- Yudelson J. 2010. *Preventing the Next Urban Water Crisis*. Gabriola Island, BC: New Society

Bibliography (Energy)

- Abramsky, k. (Ed.). 2010. *Sparkling a Worldwide Energy Revolution: Social struggles in the transition to a post-petrol world*. Edinburgh: AK Press.
- Boyle, G. (Ed.). 2004. *Renewable energy: power for a sustainable future*. Oxford: Oxford University Press.
- Boyle, G. (Ed.). 2007. *Renewable electricity & 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 on: 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 the course)