

**Regional Water Planning**

Code: 44475  
ECTS Credits: 6

Degree	Type	Year	Semester
4317520 Territorial Studies and Planning	OT	0	2

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**

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

**Use of Languages**

Principal working language: english (eng)

**Prerequisites**

English read, spoken and written

**Objectives and Contextualisation**

The module aims to present to students the current debates on the management of water and energy resources, emphasizing the territorial dimension. It is intended to collect case studies at different scales in different areas of the world.

The course will pay special attention to proven conventional management models based on centralized technologies, expert approaches and "bottom-up" management, with more alternative resources, decentralized technologies and participatory processes open to larger segments of society. Both models are compared in terms of governance and power relations. Another very important element of the course will be the analysis of the territorial conflicts that occur in the operation of these management models.

Through readings of selected materials, lectures and class presentations and discussions, students are expected to gain basic and robust knowledge on water and energy issues from environmental, social and territorial perspectives.

**Competences**

- Analyse and interpret environmental issues, applying your knowledge of environmental and ecological economics
- Analyse and interpret spatial and regional projections of social and economic imbalances in the processes of land-use planning and urban planning
- That students are able to integrate knowledge and handle complexity and formulate judgments based on information that was incomplete or limited, include reflecting on social and ethical responsibilities linked to the application of their knowledge and judgments.
- That the students can apply their knowledge and their ability to solve problems in new or unfamiliar environments within broader (or multidisciplinary) contexts related to their field of study.
- Work in an international multidisciplinary context that promotes the values of social and gender equality

**Learning Outcomes**

1. Evaluate social and economic imbalances in the different water management models in relation to urban planning and plans.
2. Focus regional work on the basis of social and gender equity.
3. Identify spatially and territorially water management models in different socio-economic situations.
4. Know and understand new forms of governance for water and energy.
5. Know and understand the main regional and socioeconomic conflicts linked to water management.
6. Know the different models of water and energy management in urban planning.
7. That students are able to integrate knowledge and handle complexity and formulate judgments based on information that was incomplete or limited, include reflecting on social and ethical responsibilities linked to the application of their knowledge and judgments.
8. That the students can apply their knowledge and their ability to solve problems in new or unfamiliar environments within broader (or multidisciplinary) contexts related to their field of study.

## **Content**

Introduction: The Water-Energy nexus

From the hydrological cycle to the hydrosocial cycle

The large scale: reservoirs, transfers, desalination plants

The small scale: gray water and rainwater

The next resource ?: Regenerated Water

Water and cities: internal consumption

Virtual water and the water footprint

Water and disasters

Water: right or merchandise

Water and Tourism

Political politics of energy: soft and hard energy alternatives

Energy, planning and management

Primary energy sources: geopolitical approach

Multilevel governance and scale policies

Energy, social innovation and local development

Energy as a social need

Conflict in land uses

Energy policies in the European Union

## **Methodology**

The teaching methodology includes two main typologies

a) Master classes. In some sessions there will be a guest speaker.

b) Seminars. A brief introduction to the specific topic taught by the instructor followed by the presentation of assigned readings by the students and a discussion group of the main points discussed in the readings.

Students are expected to read the assigned materials; prepare and guide debates and take an active part in them.

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			
Lectures	20	0.8	1, 4, 3
Master classes	15	0.6	6, 7, 8
Seminars	50	2	1, 6, 5, 4, 2
Type: Supervised			
Assigned readings	21	0.84	6, 5, 7, 8
Tutorials	10	0.4	1
Type: Autonomous			
Personal study	25	1	6, 7, 8

## Assessment

2 works: One at the end of the water part and the other at the end of the energy part

Class presentations of the assigned readings

Participation in the debates of the seminars

## Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Class participation	10%	0	0	5, 4, 3
Oral presentation	20%	6	0.24	1, 6, 5, 3, 7, 8
Work I (Water)	40%	1.5	0.06	1, 6, 5, 4, 2, 7, 8
Work II (Energy)	30%	1.5	0.06	1, 6, 5, 4, 2, 7, 8

## Bibliography

At the beginning of the course, a list will be distributed with the bibliography to be read

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

Boelens, R., Perreault, T. and Vos, J. (eds) (2018). *Water Justice*. Cambridge: Cambridge University Press.

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)

Gandy M 2014 *The fabric of Space. Water, Modernity and the Urban Imagination*. Cambridge MA: The MIT Press

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.

Sedlak, D. 2014 *Water 4.0*. New Haven, Conn: Yale University Press

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Sedlak, D. 2014 *Water 4.0*. New Haven, Conn: Yale University Press

Sultana, F. and Loftus, A (eds) 2012 *The Right to Water. Politics, governance and social struggles*. London: Earthscan.

Swyngedouw, E. 2004 *Social Power and the Urbanization of water* Oxford: Oxford University Press

Swyngedouw, E. 2015 *Liquid Power. Contested Hydro-Modernities in Twentieth Century Spain*. Cambridge, MA: The MIT 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. Sparking 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

## **Software**

None of specific