Universitat Autònoma de Barcelona

2020/2021

Water, Energy and Land Management

Code: 43484
ECTS Credits: 6

Degree	Type	Year	Semester
4313300 Regional and Population Studies	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

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.

Competences

- Detect the complexity of territorial and demographic dynamics and recognize the most efficient management mechanisms, particularly in conflict situations
- 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.
- Use English in different formats and contexts.

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 the main territorial, social and environmental conflicts associated with water and energy management.
5. Use English in different formats and contexts.

Content

Introduction: The Water Energy Nexus
From the Hydrological Cycle to the Hydrosocial Cycle
The large scale: Dams, Aqueducts, Desalination Plants
The small scale: Greywater, Rainwater Harvesting
The next resource?: Reclaimed Water
Water and Cities: domestic consumption
Virtual Water and the Water Footprint
Water and Disasters
Water: Commodity or Right?
Water and Tourism
Political Ecology of Energy: soft and hard energy paths
Energy, Planning and Management
Primary energy sources: a geopolitical approach
Multilevel governance and the polítics of scale

Energy, social innovation and local development
Energy as a social need
Land use conflicts
Energy policies in the European Union

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.

The activities that could not be done onsite will be adapted to an online format made available through the UAB's virtual tools. Exercises, projects and lectures will be carried out using virtual tools such as tutorials, videos, Teams sessions, etc. Lecturers will ensure that students are able to access these virtual tools, or will offer them feasible alternatives.

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Lectures	6	0.24	3
Oral presentation	6	0.24	1
Seminars	20	0.8	
Type: Supervised			
Preparation of oral presentations	5	0.2	1
Readings	21	0.84	2, 4
Tutorials	4	0.16	2, 4, 1, 3
Type: Autonomous			
Personal study	27	1.08	2, 4, 1, 3
Preparation of papers	34	1.36	3
Readings	23	0.92	2

Assessment

- Two exams: one at the end of the water part and the other at the end of the energy part

- Oral presenation of assigned readings

- Participation in class debates

VERY IMPORTANT: Total or partial plagiary of any of the exercises will automatically be considered "fail" (0) for the plagiarized item. Plagiary is copying one or more sentences from unidentified sources, presenting it as original work (THIS INCLUDES COPYING PHRASES OR FRAGMENTS FROM THE INTERNET AND ADDING THEM WITHOUT MODIFICATION TO A TEXT WHICH IS PRESENTED AS ORIGINAL). Plagiarism is a serious offense. Students must learn to respect the intellectual property of others, identifying any source they may use, and take responsibility for the originality and authenticity of the texts they produce.

In the event that assessment activities cannot be taken onsite, they will be adapted to an online format made available through the UAB's virtual tools (original weighting will be maintained). Homework, activities and class participation will be carried out through forums, wikis and/or discussion on Teams, etc. Lecturers will ensure that students are able to access these virtual tools, or will offer them feasible alternatives.

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Exam Energy Part	30 %	2	0.08	2, 4, 5, 1, 3
Exam water part	40%	2	0.08	2, 4, 1, 3
Oral presentation	20%	0	0	2, 4, 5, 1
Participation	10%	0	0	5, 1, 3

Bibliography

A set of class readings will be distributed at the beginning of the course

Bibliography (Water)

Bakker, Karen 2010 Privatizing Water. Governance Failure and the World's Urban Water Crisis. Ithaca, NY: Cornell Univ. Press

Baumann, Duane D,; Boland, John J. & Hanemann, W. Michael. 1998. Urban Water Demand Management and Planning. New York: MacGraw Hill

Buzar, Stephan; Ogden, Philip E. & Hall, Ray. 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, Kelly S.; Russell, Sally; Spinks, Anneliese & Mankad, Aditi. 2012. Determinants of household water conservation: the role of demographic, infrastructure, behavior and psychosocial variables. Water Resources Research 48(10)

Inman, David & Jeffrey, Paul. 2006. A review of residential water conservation tool performance and influences on implementation effectiveness. Urban Water Journal 3: 127-43.

Prud'homme, Alex 2011. The Ripple Effect: The Fate of Freshwater in the Twenty-First Century. New York: Scribner

Renwick, Mary E. & Archibald, Sandra O. 1998. Demand side management policies for residential water use: Who bears the conservation burden? Land Economics 74:343-59.

Sauri, David. 2013: Water Conservation: Theory and Evidence in Urban Areas of the Developed World Annual Review of. Environment and Resources38:1-22.

Sultana, Farhana & Loftus, Alex. (eds) 2012 The right to Water. Politics, governance and social struggles. London: Earthscan.

Swyngedouw, Erik. Social Power and the Urbanization of water Oxford: Oxford University Press

Troy, Patrick ed. 2008. Troubled Waters: Confronting theWater Crisis in Australian Cities. Canberra, Australian University Press

UNESCO. 2012. The UN World Water DevelopmentReport: Managing Water under Uncertainty and Risk. Paris: UNESCO

Willis, Rachelle McDonald; Stewart, Rodney Anthony; Panuwatwanich, Kriengsak & Williams, Philip R. Hollingsworth AL. 2011. Quantifying the influence of environmentaland 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, Jerry. 2010. Preventing the Next Urban Water Crisis. Gabriola Island, BC: New Society

Bibliography (Energy)

Becker, Sören; & Kunze, Conrad. (2014). Transcending community energy: Collective and politically motivated projects in renewable energy (CPE) across Europe. *People, Place and Policy Online*, *8*(3), 180-191. https://doi.org/10.3351/ppp.0008.0003.0004

Bouzarovski, Stefan, & Petrova, Saska. (2015). A global perspective on domestic energy deprivation: Overcoming the energy poverty-fuel poverty binary. *Energy Research & Social Science*, *10*, 31-40. https://doi.org/10.1016/j.erss.2015.06.007

Bridge, Gavin; Barca, Stefania; Özkaynak, Begüm; Turhan, Ethemcan; & Wyeth, Ryan. (2018). Towards a Political Ecology of EU Energy Policy. In C. Foulds & R. Robison (Eds.), *Advancing Energy Policy* (pp. 163-175). https://doi.org/10.1007/978-3-319-99097-2_11

Burningham, K., Barnett, Julie, & Walker, Gordon (2015). An Array of Deficits: Unpacking NIMBY Discourses in Wind Energy Developers' Conceptualizations of Their Local Opponents. *Society & Natural Resources*, *28*(3), 246-260. https://doi.org/10.1080/08941920.2014.933923

Connolly, D., Lund, Henrik, & Mathiesen, Brian Vad (2016). Smart Energy Europe: The technical and economic impact of one potential 100% renewable energy scenario for the European Union. *Renewable and SustainableEnergy Reviews*, *60*, 1634-1653. https://doi.org/10.1016/j.rser.2016.02.025

Correljé, Aad F. & van der Linde, Coby (2006). Energy supply security and geopolitics: A European perspective. *Energy Policy*, *34*(5), 532-543. https://doi.org/10.1016/j.enpol.2005.11.008

Karimi, Azadeh, & Brown, Gregory (2017). Assessing multiple approaches for modelling land-use conflict potential from participatory mapping data. *Land Use Policy*, *67*, 253-267. https://doi.org/10.1016/j.landusepol.2017.06.004

Kaygusuz, Kamil (2011). Energy services and energy poverty for sustainable rural development. *Renewable and Sustainable Energy Reviews*, *15*(2), 936-947. https://doi.org/10.1016/j.rser.2010.11.003

Marull, Joan; Pino, Joan; Tello, Enric & Cordobilla, María José. (2010). Social metabolism, landscape change and land-use planning in the Barcelona Metropolitan Region. *Land Use Policy*, *27*(2), 497-510. https://doi.org/10.1016/j.landusepol.2009.07.004

Middlemiss, Lucie & Gillard, Ross (2015). Fuel poverty from the bottom-up: Characterising household energy vulnerability through the lived experience of the fuel poor. *Energy Research & Social Science*, *6*, 146-154. https://doi.org/10.1016/j.erss.2015.02.001

Nadin, Vincent & Stead, Dominic (2008). European Spatial Planning Systems, Social Models and Learning. *DisP - The Planning Review*, *44*(172), 35-47. https://doi.org/10.1080/02513625.2008.10557001

Sovacool, Benjamin (2014). What are we doing here? Analyzing fifteen years of energy scholarship and proposing a social science research agenda. *Energy Research & Social Science*, *1*, 1-29. https://doi.org/10.1016/j.erss.2014.02.003

Stead, Dominic (2013). Convergence, Divergence, or Constancy of Spatial Planning? Connecting Theoretical Concepts with Empirical Evidence from Europe. *Journal of Planning Literature*, *28*(1), 19-31. https://doi.org/10.1177/0885412212471562

Tews, Kerstin (2015). Europeanization of Energy and Climate Policy: The Struggle BetweenCompeting Ideas of Coordinating Energy Transitions. *The Journal of Environment & Development*, *24*(3), 267-291. https://doi.org/10.1177/1070496515591578

van der Schoor, Tineke, & Scholtens, Bert (2015). Power to the people: Local community initiatives and the transition to sustainable energy. *Renewable and Sustainable Energy Reviews*, *43*, 666-675. https://doi.org/10.1016/j.rser.2014.10.089