UAB
Universitat Autònoma de Barcelona

Energy and Society

Code: 102832
ECTS Credits: 6

2024/2025

Degree	Type	Year
2501915 Environmental Sciences	OT	4

Contact

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Teaching groups languages

You can view this information at the end of this document.

Prerequisites

To take this subject it is recommended to have passed the following subjects:

- Medi Ambient i Societat

- Administration and Politics Environmentals

- Gestió i Planificació dels Recursos i del Territori

On the other hand, during the course concepts and knowledge previously acquired in the subjects of basic and compulsory education will be used:

- Usos Humans del Sistema Terra

- Introducció al Dret

- Dret Ambiental

- Economia Ambiental i dels Recursos Naturals

- Cartografia i Fotointerpretació

Objectives and Contextualisation

Course Description

Our planet is undergoing unprecedented changes that need urgent response, swift action and effective adaptation and mitigation policies. This course will examine how the international community, nations, cities and communities are mitigating and adapting to the impacts of global climate change. We will examine a variety of global systems including our oceans, biodiversity, urban systems and consumption networks. For each topic, we will aim to understand the core global challenge and the current responses to a changing planet. While climate change is the greatest global threat faced by humanity, we will examine other global environmental challenges such as biodiversity loss, resource extraction, the regulation of pollutants and environmental injustice. We will also debate policy alternatives, allowing students to develop their own policy positions.

The course will be organized around five primary themes: Oceans, Land, Cities, Consumption, and Policies, with 1 to 3 weeks devoted to each theme. In each theme, we will explore the global threats, mitigation efforts and alternatives. The final theme on policies will allow us to debate mainstream and alternative policy approaches to addressing global environmental challenges. You will also be expected to present and defend your own policy recommendation on a topic of your choice.

This will be the inaugural edition this course at the UAB. It will also be the first course time that the UAB has allowed our institute, *l'Institut de Ciència i Tecnologia Ambientals* (ICTA-UAB) to develop and take responsibility for teaching a course to undergraduates at this university. As such, the content of the course will be showcasing the research and expertise at ICTA, allowing students to become familiar with the specialization and research teams working on exciting topics in environmental science at ICTA. At the same time, a special effort will be made to create a coherent course that is pulled together with common themes and learning objectives.

We will explore several topics in environmental science which you have probably already encountered in your degree program, although the aim is to examine these topics from the perspective of adaptation strategies, mitigation efforts and policy alternatives.

The course may include occasional guest speakers, however to ensure course continuity and structure, the program will be led by one course instructor to ensure pedagogical coherence.

Learning Objectives

By the end of the course students should be able to:

- Describe the global threats to our oceans, biodiversity, and terrestrial ecosystems, and how these changing systems are impacting human wellbeing
- Describe the status of climate change agreements, negotiations, conferences, emissions targets, financing and instruments.
- Explain current policy strategies to mitigate and adapt to global climate change
- Identify policy tools used to in urban and local adaptation and mitigation strategies
- Assess the viability of adaptation and mitigation policies in the contexts of natural resource management and urban management
- Appreciate the difficulty of reaching international agreements, through experiential learning via an experiential negotiation exercise
- Understand your personal weaknesses and default settings in how they perform in a negotiation, debate and public presentation
- Formulate a substantiated opinion on conventional environmental policies such as carbon trading and carbon taxes
- Analyze the strengths and weaknesses of pro-growth and degrowth environmentalism
- Describe conventional measures to protect biodiversity, the impacts these have had on traditional communities and alternative approaches to biodiversity conservation
- Explain the difference between scientific knowledge and traditionalor indigenous knowledge.
- Describe policies and efforts that cities are making to adapt to climate change
- Explain how our current economy is based on a capitalist logic of extraction and growth

Competences

- Adequately convey information verbally, written and graphic, including the use of new communication and information technologies.
- Analyze and use information critically.
- Demonstrate adequate knowledge and use the tools and concepts of the most relevant social science environment.
- Demonstrate concern for quality and praxis.
- Demonstrate initiative and adapt to new situations and problems.
- Quickly apply the knowledge and skills in the various fields involved in environmental issues, providing innovative proposals.

- Teaming developing personal values regarding social skills and teamwork.
- Work autonomously

Learning Outcomes

1. Adequately convey information verbally, written and graphic, including the use of new communication and information technologies.
2. Analyze and use information critically.
3. Demonstrate concern for quality and praxis.
4. Demonstrate initiative and adapt to new situations and problems.
5. Identify geographic processes in the environmental surroundings and to value properly and originally.
6. Know and apply the most relevant methodologies in the planning.
7. Recognize and explain the spatial relationships at different territorial stairs, physical, economic, social and cultural diversity of the territories.
8. Teaming developing personal values regarding social skills and teamwork.
9. Undertake spatial relationships on different territorial stairs through the relationships between nature and society in the field of territorial planning.
10. Work autonomously

Content

Week 1. Introductions and Course Overview

Learning Objectives

Expectations

Strategies for migitation of climate change

Week 2. Global Climate Change

Feedback effects and tipping points

The current status of international climate negotiations

Adaptation

Warming in the Arctic and feedback effects

Week 3. Oceans: Global Change, Adaptation and Mitigation Strategies

Historic changes to our oceans

Overfishing and our food supply

Marine litter

Week 4. The Mercury Game Negotiation Exercise

International and multilateral negotiations

Preparing for negotiations and reaching agreements

Experiential learning

Week 5. Global Change in Terrestrial Ecosystems

Global Biodiversity Loss

Governance and Conservation Effectiveness

Traditional and Indigenous Knowledge

Week 6. Cities & Climate Mitigation

Greenhouse gas emissions from global cities

City and regional mitigation plans

Week 7. Climate Mitigation in Cities

Built Environment and Mobility

Transformational Urban Planning: Barcelona's Superblocks

Bike Bus

Week 8. Climate Justice

Green space and wellbeing

Environmental justice

Green gentrification

Week 9. Climate Policies

Carbon trading, Carbon taxes and carbon prices

Artificial Intelligence (AI) for climate policy advice

Week 10. Consumption & Degrowth Part 1

Lifecyle assessment

Circular Economy

Week 11. Consumption & Degrowth Part 2

Degrowth

Activities and Methodology

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Classroom exercises (classroom practices)	15	0.6	1, 2, 3, 4, 6, 8, 9
Master classes (theory)	25	1	2, 5, 6, 7, 9
Student exhibitions (seminars)	10	0.4	1, 5, 7, 8, 10
Type: Supervised			
Group tutorials	2	0.08	2, 5, 6, 8

Oriented readings	12	0.48	1, 2, 5, 7, 10
Preparation of exercises	10	0.4	2, 3, 4, 6, 10
Teamwork	10	0.4	1, 2, 5, 7, 8
Type: Autonomous			
Individual tutorials	1	0.04	1, 2, 3, 4, 5, 6, 7, 9
Reading and personal study	28	1.12	2, 5, 6, 7, 9, 10
Search for information	10	0.4	2, 5, 6, 7, 9, 10
Teamwork	25	1	1, 2, 3, 4, 5, 6, 7, 8, 9

The teaching activities of the subject will be structured as follows:

- Lectures: teacher exhibitions encouraging debate and student participation.
- Exercises directed in the classroom: several sessions will be allocated to exercises based on the realization of computer practices with software standard (MS Office) and geographic information systems free (QGIS).
- Cooperative work based on guided readings: several sessions of formal cooperative work will be carried out based on the previous work of the students (readings).
- Team work - exhibitions of the students: the students must do a group work, the results will be exposed orally in the classroom.

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.

Assessment

Continous Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Class Participation	30%	0	0	1, 2, 3, 4, 5, 6, 7, 8, 9
Policy Memo	15%	2	0.08	1, 2, 5, 6, 7, 9
Policy Memo Presentation	15%	0	0	2, 10
Short Assignments	20%	0	0	1, 2, 5, 6, 7, 8, 9
Student Choice Project	20%	0	0	1, 5, 7, 8, 9, 10

Class Participation 30%

Student Choice Project 20%

Short Assignments 20%

Policy Memo 15%

Policy Memo Presentation 15%

Bibliography

A course reader (dossier) will be made available for purchase at the Copisteria UAB (Canon) at the Plaça Civica. Each week students are expected to have come to class having completed the readings. Students should critically engage with the readings, identifying the central argument of the author(s), connecting those arguments with the themes of the course. It is highly recommended that students make notes on hardcopies of the reader (dossier). The readings are an essential element of the course. Students must complete the readings in order to learn in this course.

Students will also be asked to purchase and read one book:

Hickel, J. 2020. Less is More. How Degrowth will Save the World. Penguin Books. New York.

Software

Standard software (MS Office) will be used throughout the course.

Language list

Name	Group	Language	Semester	Turn
(PAUL) Classroom practices	1	English	second semester	morning-mixed
(TE) Theory	1	English	second semester	morning-mixed