

Environmental and Energetic Sustainability

Optional course of 3 ECTS

Lecturer(s): Dr. Oriol Pou

1. Course presentation

In this course we are going to discuss energy trends in production and consumption and the different paths that lead us to the Climate Emergency. The students will study all types of energies that can be used to sustain our economic system with their limitations and their impact on the environment.

2. Objectives of the course

Upon completion of the course, students must be able to:

- Identify the limits of growth of our economic system.
- Understand the different forms of energy available knowing its capabilities and limitations.
- Understand that the continuity of our society needs an important reduction of the energy demand and that it is impossible to maintain our economic model with a 100% renewable energy mix.

3. Course content

1. Energy and the society and the limits of growth.
2. Peak oil and peak everything (especially fossil fuels and energy transition materials)
3. Nuclear energy: Limitations of fission and truth behind fusion achievements
4. Hydrogen: A new hope
5. Renewables: A 100% renewable economy?
6. Is there any solution?

4. Methodology/Training Activities

The topics will be discussed in class. In addition, the students must do some assessments and presentations of given topics.

5. Evaluation

Example:

The course is assessed with on-going evaluation. Attendance and participation in class is essential to achieve the learning objectives of the course and cannot be less than the current policy on the IQS School of Management.

The evaluation will be based on the following criteria and percentages:

Assessment system	%
1. Continuous assessment tests	60%
2. Class participation and activities	20%
3. Work presentation	20%

6. Bibliography

- Donella H. Meadows [and others]. *The Limits to Growth; a Report for the Club of Rome's Project on the Predicament of Mankind*. New York :Universe Books, 1972.
- Turiel Martínez, Antonio M. *Petrocalipsis : crisis energética global y cómo (no) la vamos a solucionar / Antonio Turiel*. Primera edición en esta colección. Madrid: Alfabeto Editorial, S.L., 2020.
- Tester JW. *Sustainable Energy Choosing Among Options / Jefferson W. Tester ... [et Al.]*. 2nd ed. MIT Press; 2012.