2EL2160 – Environmental economics, energy and sustainable development

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Department: DÉPARTEMENT SCIENCES HUMAINES ET SOCIALES
Language of instruction: FRANCAIS
Campus: CAMPUS DE PARIS - SACLAY
Workload (HEE): 60
On-site hours (HPE): 35,00
Elective Category : Business Sciences
Advanced level : Yes

Description

The objective of the "Economics of the Environment, Energy and Sustainable Development" course is to address:

i) the major environmental issues of the 21st century and the human factors that structure them (demography, economy, development, etc.);

(ii) the theories in the field that have, in particular, founded economic principles that must be adopted in response to these issues (optimal carbon tax and environmental taxation, fight against negative externalities, etc.);

(iii) economic and regulatory policies in practice, both at the environmental and energy levels (European energy-climate packages, low-carbon electricity mix, etc.).

Quarter number

SG8

Prerequisites (in terms of CS courses)

Common economics course.

Syllabus

- Origins of economic growth and effect on the "unavailability" of natural resources (end of cheap oil, etc.)
- Economic models for the optimal management of renewable and non-renewable natural resources
- Demographics: changing world populations
- Climate: greenhouse effect and climate change
- Resource management issues (reserves, distribution, prices): resources for energy (oil, gas, coal, uranium), raw materials (ores), water
- State of the art and new technologies for energy

Class components (lecture, labs, etc.)
Amphitheatre / Tutorials

Grading
Quizz, 1,5 hours duration / Final exam, 2 hours duration:Finale grade = Quizz (20%)+ Final exam (80%)

Course support, bibliography
Slideshows, multidisciplinary and economics books (to come).

Resources
Course in French.

Learning outcomes covered on the course
- Know the key figures (state of play and scientific forecasts) that are the subject of so much debate in the media when they involve stakeholders in an environmental conflict, for example industrialists and ecologists.
- Understand the assumptions and models on which these figures are based.
- Raise awareness of the coupling of resources, energy, environment, climate, economy, geopolitics, demography
- Raise awareness at different levels: local to global

Description of the skills acquired at the end of the course
C1.1 Examine a problem in its full scope and depth, within and beyond its immediate parameters, in order to understand it as a whole. This set links the scientific, economic and social dimensions of the problem.

C2.1 Master a field or discipline based on the basic or engineering sciences.

C4.1 Think in terms of customers, identify and analyse customer needs, other stakeholder constraints and societal challenges.

C9.4 Demonstrate rigour and critical thinking by approaching problems from all angles, scientific, human and economic.