GESTIONE DELLE RISORSE NATURALI: ENERGIA, ACQUA, BIODIEVRSITA'

Docente/i: DALMAZZONE SILVANA
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Settore: SECS-P/02
CFU: 5+4
Sede: TORINO

PROGRAMMA D'ESAME A.A.: 2012-2013

Obiettivi

The NATURAL RESOURCE MANAGEMENT course is co-taught by S. Dalmazzone and G. Bravo. It aims at providing the basic economic concepts of natural resource management along with the analytical tools needed to make them operational. The course will also provide students with the ability to model a socio-ecological agents through agent-based modelling.

The course presupposes competences acquired in the courses of Governance of economic processes, Quantitative Methods for the Social Sciences, Environmental Economics.

Risultati dell'apprendimento

Students should reach a good knowledge of the course topics and be able to thoughtfully use the tools acquired. The acquisition of these skill will be subject to verification as described in the exam section.

Programma

The programme covers the following topics:

- Socio-ecological systems and ecosystem services.
- Role of natural resources in economic development.
- Efficient and optimal use of natural capital: non-renewable resources.
- Fossil fuels: scarcity, environmental impacts, costs and prospects of exhaustion. Security of supply. Efficient and optimal management of reserves.
- Alternative energies: hydrogen, renewables, biofuels. Technological innovation and competitiveness.
- Efficient and optimal use of natural capital: renewable resources.
- The state of world marine resources and their management policies
- The state of global forest resources and their management policies.
- Water supply. Scarcity: models and management scenarios. Water pollution: policies and instruments.
- Biodiversity loss, resilience and stability of ecosystems.
- International agreements: Convention on Biological Diversity, Biosafety Protocol, and national strategies and Clearing House Mechanism.
- Modelling of social-ecological systems through agent-based models.

Testi Consigliati

The bibliography will consist of articles published in scientific journals, documents of international organizations and chapters from the following textbooks, according to specific instructions that will be provided during the course.

1. SD part:
- Perman R., Ma Y., J. Mc Gilvray, Common M. (2011), Natural Resources and Environmental Economics, Harrow, UK: Pearson education, 4th edition.
- Millennium Ecosystem Assessment (2005), Washington: Island Press
- Baland JM and JP Platteau (1996), Halting Degradation and Natural Resources, Oxford: OUP.

2. GB part:
- Steven F. Railsback & Volker Grimm (2011), Agent-Based and Individual-Based Modeling: A Practical Introduction. Princeton University Press.
- NetLogo User Manual: http://ccl.northwestern.edu/netlogo/docs/

A detailed syllabus will be provided during the classes and will be available on the course website.

Modalità Didattiche

The course is taught in English and encompasses a few lectures and seminars by external scholars on applied environmental issues. The website (www.personalweb.unito.it/silvana.dalmazzone /GRN.html) allows you to download the course material, and up-to-date information on teaching, references, links to external resources.

The agent

Modalità di Esame

The final evaluation is composed of two parts:

(A) written examination at the end of the course (+ interim self-assessment tests).

(B) development by the students of a social-ecological model on a subject agreed with Prof. Bravo.

The final grade is given by the arithmetic average of the two tests.

Note

Other course website:

http://www.personalweb.unito.it/silvana.dalmazzone/GRN.html