UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Enviromental and Energy Economics

2324-1-F7501Q076

Aims

The course aims at delivering the basic microeconomic tools that allow students to understand the main energy and environmental problems characterizing the current international context. The first part of the course will be devoted to the analysis of consumers' behavior, firms' behavior and the functioning of markets in the allocation of goods and services. Particular attention will be devoted to market failures an possibile regulatory interventions, through market and non-market instruments.
The study of fossil and renewable energy sources and the energy balance, the learning of the main methodologies of environmental evaluation and environmental damage control are all aimed at allowing the student to understand and critically analyze, also from a propositional point of view, the evolving energy and environmental policies at national and supranational level, and to develop autonomy of judgment and specific communication skills.

Contents

The course consists of two fundamental parts: the first one focuses on energy economics, starting from the theory of exhaustible resources (based on the marginalistic and neoclassical economic theory), with special reference to the main determinants of energy demand, to the stock sources price formation, to the difference between reserves and resources, as well as to the fundamental national and international energy policy issues.

According to the latter issue, the recent energy markets liberalization process, its outcomes and constraints will be analysed, together with the main initiatives aimed at promoting energy efficiency and an increasing recourse to renewable energy sources.

Features and functioning of power, oil and gas markets, will be highlighted, paying particular attention to access pricing models to energy transport and distribution essential facilities.

The second part of the course will be devoted to the main issues of environmental economics with reference to the basic concepts of externalities, market failures, public goods and sustainable development. Particular emphasis will

be devoted to the evaluation methods of environmental assets, on Cost Benefit Analysis (CBA) and on the different tools available to the policymaker for solving ecological problems through the markets.

Detailed program

Introduction and methods

1. The current energy context

2. Microeconomics (consumer, firm and markets)

3. Market failures and interventions (externalities, public goods, natural monopoly)

Energy economics

4. Reserves and resources

5. Renewable and non-renewable sources

6. Pricing of the stock energy sources

7. Energy policy and market liberalization: the electricity market platform

8. Energy demand

9. Oil and gas markets

Environmental economics

10. Economics and the environment

11. Sustainable development

12. Kyoto protocol and climate change

13. Environmental markets

14. Economic valuation of environmental goods

15. Life Cycle Assessment (LCA) analysis

Prerequisites

None

Teaching form

Classes, 8 credits - 64 hours

Textbook and teaching resource

References:

Energy economics: P. Zweifel, A. Praktiknjo, G. Erdmann, Energy Economics. Theory and Applications, Springer, 2017.

Environmental economics: R.K. Turner, D.W. Pearce, I. Bateman, Economia ambientale, Il Mulino, 2003.

Supplementary online material will be provided on the e-learning platform

Semester

Second term

Assessment method

The exam will be held exclusively in viva form (interview on the topics covered during classes).

The knowledge required to sustain the test are represented by those acquired during the course and based on the teaching material provided.

Students may submit a written essay on a topic analyzed during classes based on new research material.

The assessment will be based on the completeness of the preparation, on the degree of understanding of the analyzed issues and of their relationships, on the ability to grasp, through the offered theoretical framework, the main concrete issues and dynamics underway on the markets, currently subject of international scientific debate. Adequate weight will also be given to the candidate's language skills and exhibition capacity.

Office hours

Monday at 15, room 3076, building U6- 3rd floor

Online meetings can be arranged upon request.

Sustainable Development Goals

AFFORDABLE AND CLEAN ENERGY | RESPONSIBLE CONSUMPTION AND PRODUCTION | CLIMATE

ACTION