UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

# SYLLABUS DEL CORSO

# Resources Economics and Management

**2627-1-F7603Q003-F7603Q00302**

## Aims

This module is part of the course Renewable and non-Renewable resources and their economics, an interdisciplinary program that integrates science and economic principles to analyze the use of resources and design solutions to improve it.
It presents different rules proposed by economists to manage scare resources. It also introduces the main metrics to measure economic features of resource use. It also provides methods to evaluate how projects and policies can be efficient to meet economic and social needs when some resources are scarce. The course will also illustrate how the proposed methods apply to a number of real-world situations.

## Contents

• Fundamental economics concepts for resource economics.
• Static models and Dynamic models of natural resource use.
• Evaluation methods for policies and projects

## Detailed program

Concepts, metrics and measurement

• economic concepts for examining natural resource use and pricing;
• sustainability and natural resource scarcity;
• Economics of energy production an introduction to environmental resources: externalities and pollution;
• pollution policy in practice.

Design of policies for non-renewable resources.

• the economics and regulation of the fishery: an introduction;
• non-renewable resource use: the Theory of Depletion;
• non-renewable natural resource use: departures from the competitive case and from fixed stock size;
• the economics of sustainability.
Evaluation of projects and policies for renewables and non renewables
• Evaluation methods: Economic Impact studies, Multicriteria Analysis, Cost Benefit Analysis
• application to energy generation real world projects and policy
• application to specific fields: fisheries, forests or others

## Prerequisites

Basic principles of Mathematics (analysis, derivatives)

## Teaching form

Interactive lectures.
6 ECTS (48 hours):
• 32 hours of in person lecture ;
• 16 hours reading and discussing scientific articles, case studies, possible integration of guest lectures by experts in the field, Seminar. These may be hold online or in presence with online option, based on student preferences and didactical requisites

Attendance to lectures and participation are highly recommended.
The course is mostly conceived as a “pen and paper”. We will avoid long slide tunnels that are usually less functional to the communication of knowledge. Some slides may be used but they are supplementary material.

We will also study real world projects and policies.

The course does not require the use of specific softwares, although the instructor may, sometimes, suggest but not impose some software tools.

## Textbook and teaching resource

Teaching resources include :
• Hartwick and Olewiler, The Economics of Natural Resource Use, Harper & Row, 2nd edition 1998.
• Notes
• Additional scientific articles provided on the e-learning platform.

## Semester

second semester

## Assessment method

The final examination consists of an oral exam at the end of the course, possibly complemented by a short written exam. The exam will consist in a short evaluation of students knowledge and the discussion of a practical case.

overall assessment considering the following criteria:
(1) knowledge and understanding;
(2) ability to connect different concepts;
(3) autonomy of analysis and judgment;
(4) ability to correctly and clearly use scientific language.

## Office hours

variable, contact the instructor for any info.

## Sustainable Development Goals

AFFORDABLE AND CLEAN ENERGY