

ENVIRONMENTAL MANAGEMENT AND SUSTAINABILITY (6 CFU)
PROF. MARCELO ENRIQUE CONTI
(6 CFU, course in English – first year - I semester — MANIMP)

General Objectives

The course of ENVIRONMENTAL MANAGEMENT AND SUSTAINABILITY (9 CFU) provides students with the necessary knowledge on important topics such as environmental management, environmental economics, circular economy, green economy, and sustainability. Other important topics are risk assessment in its various declinations as well as environmental assessments and its many interdisciplinary aspects, especially aimed at the needs of businesses. Through case studies, classroom exercises and group work, students will acquire general knowledge on the fundamental aspects of sustainable development and its evolution, as well as on the coherence of policies on sustainable development (PCSD) related to the 2030 Agenda, both in the application of specific tools and in theoretical development.

Prerequisites

It would be important for the student to have basic knowledge of the scientific/experimental method and basic notions of complexity theory.

Syllabus (English)

Environmental economics and management. The evolution of the concept of environment in economic theory. The failure of the environmental market. The paradigm of economic development and environmental protection. Sustainable Development: fundamental aspects, weak and strong sustainability; ecological footprint. 2030 Agenda. Policy coherence for sustainable development (PCSD). Digital platforms and sustainability. Bioeconomy. Green Economy agenda. Circular Economy, Ecological Economy (characteristic and definition, IPAT equation, Kuznets Curve). Indicators of Sustainable Development. Sustainability performance indicators in businesses. Case studies. The estimation of the economic value of the environmental resource. Methods of monetary valuation of environmental resources. Cost-Benefit Analysis. Environmental Impact Assessment, Strategic Environmental Assessment, Impact Assessment.

The Italian Environmental Code. The EU directive: Integrated Pollution Prevention and Control (IPPC) and the Integrated Environmental Authorization (IEA). Best Available Technologies (BAT). The EU Industrial Emission Directive (IED). Contaminated sites remediation and risk assessment. The Kyoto Protocol. Global warming and Climate change. Technical aspects of carbon sink management.

Smart cities, urban sustainability. Risk evaluation.

Case studies: Nature based solutions (NBSs). WW Dieselgate. Steel industry (ILVA Taranto), asbestos remediation, Venice lagoon and Marghera Petrochemicals, Pulp Mills, power plants. EU directives on environmental liability and crime. Coase Theorem. The urgent need for a European and International Environmental Criminal Court against environmental crimes. Methods of compensation for environmental damage. Environmental crimes law.

The mode of conducting classes may change in relation to the situation related to the pandemic

Exams: Written test, with some open-ended questions and possible evaluation of the project carried out

Recommended texts

Economics and the Environment

Eban S. Goodstein; Stephen Polasky 9th. Ed, Wiley (2020) [the first 10 chapters]

The new environmental economics,

E. Laurent, 1st edition Polity press Ltd, Cambridge (2021)

Additional material will be given by the Professor (see moodle platform)

The course is in English. Students with knowledge of Italian may also consult the following text:

IL MANAGEMENT AMBIENTALE: TEORIE, METODI E STRUMENTI IN UNA PROSPETTIVA SOSTENIBILE, Collana ManOTec, Ed. Nuova Cultura, Roma, 2018
Marcelo Enrique Conti

Syllabus (italian)

L'economia e il management ambientale. L'evoluzione del concetto di ambiente nella teoria economica. Il fallimento del mercato ambientale. Il paradigma dello sviluppo economico e la tutela ambientale. Sviluppo Sostenibile: aspetti fondamentali, sostenibilità debole e forte; impronta ecologica. Bioeconomia. Green Economy. Economia circolare, Economia Ecologica (definizione caratteristiche, equazione IPAT, Curva di Kuznets). Sviluppo sostenibile e Agenda 2030. Gli indicatori di Sviluppo Sostenibile. La coerenza delle politiche per lo sviluppo sostenibile (PCSD). Piattaforme digitali e sostenibilità. Gli indicatori di performance di sostenibilità nelle imprese. Casi di studio. La stima del valore economico della risorsa ambientale. Metodi di valutazione monetaria delle risorse ambientali. Analisi Costi-Benefici. Valutazione di Impatto Ambientale, Valutazione Ambientale Strategica, Valutazione di Incidenza.

Il Codice Ambiente. La direttiva UE Integrated Pollution Prevention and Control (IPPC) e l'Autorizzazione Integrata Ambientale (AIA). Le Best Available Technologies (BAT). La direttiva UE Industrial Emission Directive (IED). La bonifica dei siti contaminati e valutazione del rischio. Il cambiamento climatico e il riscaldamento globale. Il Protocollo di Kyoto. Aspetti tecnici della gestione dei carbon sink.

Le smart cities, la sostenibilità urbana. Valutazione del rischio ambientale.

Casi di studio: Soluzioni basate sulla natura (NBSs). WW Dieselgate, industria siderurgica (ILVA di Taranto), la bonifica dell'amianto, la laguna di Venezia ed il Petrochimico di Marghera, le Pulp Mills, le centrali per la produzione di energia elettrica. Ledirettive UE sulla responsabilità e sul crimine ambientale. Teorema di Coase. La urgente necessità di una Corte Penale Ambientale Europea e Internazionale contro i crimini ambientali. Metodi di risarcimento del danno ambientale. Legge ecoreati sui delitti ambientali.