UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Environmental Impact Assessment

2627-2-F7503Q004

Aims

The course aims to provide the theoretical foundations and operational skills related to Environmental Impact Assessment (EIA) and Strategic Environmental Assessment (SEA).

Knowledge and understanding
Students will acquire knowledge of the relevant regulatory and procedural frameworks, as well as methods for impact prediction and criteria for evaluating environmental impacts.
Applying knowledge and understanding
The acquired competencies will enable students to prepare Environmental Impact Studies (EIS) and related technical documentation, as well as to critically review studies prepared by third parties and assess the environmental compatibility of projects, plans, and programs.
Making judgements
Students will develop the ability to independently evaluate environmental impacts and to assess the sustainability and environmental compatibility of plans, programs, and projects.
Communication skills
Students will enhance their ability to communicate technical and scientific content clearly and effectively, with particular emphasis on synthesis, critical analysis, and engagement with stakeholders and the public within environmental assessment processes.
Learning skills
Given the evolving nature of the field, students will develop the ability to continuously update their knowledge, integrating new regulatory, scientific, and methodological developments.

The course is embedded within broader sustainable development strategies and contributes to the achievement of the United Nations 2030 Sustainable Development Goals (SDGs), particularly:
3. Good Health and Well-being;
6. Clean Water and Sanitation;
7. Affordable and Clean Energy;
9. Industry, Innovation and Infrastructure;
11. Sustainable Cities and Communities;

12. Responsible Consumption and Production;
13. Climate Action;
14. Life Below Water;
15. Life on Land.

Contents

Cultural basis of Environmental Impact Assessment (EIA) and Strategic Environmental Assessment (SEA).
Laws and regulations in force.
Characteristics of environmental components and factors, criteria and methods for their ante operam analysis and for the prediction of their evolution with and without the examined project or plan.
Measures for mitigation and compensation.
Criteria for environmental compatibility.
Weighting predicted impacts.
Final balance of environmental impacts.

Detailed program

The course is structured in an initial part providing an overview of the general principles of environmental assessment, as well as the methods and criteria applicable in different contexts.
The current regulatory framework and its evolution over time will be examined, with reference to both the international and European contexts.
The subsequent part of the course will focus on the current Italian regulatory framework and the procedures it defines.
All the topics that must be included in Environmental Impact Studies (EIS) for EIA and Environmental Reports for SEA will be addressed in detail.
The course will first cover the overall structure of the studies, including regulatory context and project description. It will then examine environmental components and factors, including: atmosphere, water environment, soil and subsoil, flora, vegetation and fauna, ecosystems, landscape, public health, noise and vibrations, and radiation.
Each topic will initially be introduced from a general theoretical perspective and subsequently explored in greater depth through specific technical aspects. Case studies will then be presented to allow a critical assessment of how theoretical knowledge can be applied in practice.
Finally, each topic will conclude with discussions and debates on selected case studies.

Prerequisites

Basic scientific knowledge of environmental sciences, including chemistry, physics, biology, microbiology, and, of course, ecology.

Teaching form

68 hours, including:

- 20 two-hour lectures (40 hours) of Delivered Didactics in person
- 4 two-hour lessons (8 hours) of e-learning Delivered Didactics
- 5 two-hour (20 hours) interactive activities

Textbook and teaching resource

Didactic material will be available before the lectures on the e-learning platform: http://elearning.unimib.it/course. In addition, the following texts can be used:

- ISPRA: Elementi per l'aggiornamento delle norme tecniche in materia di valutazione ambientale
- Regione Lombardia: Linee Guida VIA (SILVIA)
- V. Torretta: Studi e procedure di valutazione impatto ambientale. Dario Flaccovio Editore, 253 pp.
- A. Scialò: La Valutazione di Impatto Ambientale (VIA). Maggioli Editore, 249 pp.
- A. Zeppetella, M. Bresso, G. Gamba: Valutazione Ambientale e Processi di Decisione. NIS, La Nuova Italia Scientifica, 212 pages

Semester

First semester

Assessment method

The exam will be oral, individual, and will be an interview on the topics explained during the course. The evaluation will consider the level of knowledge of the general program (basic concepts and definitions, criteria, methods and procedures for Environmemntal Impact Assessment, Strategic Environmental Assessment and Integrated Pollution Prevention and Control) and of their application (elements for the analysis and the prediction of impacts on the differen environmental components), as well as the ability of solving some proposed practical problems.

Office hours

By appointment to be arranged via email.

Sustainable Development Goals

GOOD HEALTH AND WELL-BEING | CLEAN WATER AND SANITATION | AFFORDABLE AND CLEAN ENERGY | INDUSTRY, INNOVATION AND INFRASTRUCTURE | SUSTAINABLE CITIES AND COMMUNITIES | RESPONSIBLE CONSUMPTION AND PRODUCTION | CLIMATE ACTION | LIFE BELOW WATER | LIFE ON LAND