



UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

SYLLABUS DEL CORSO

Geologia Ambientale

2021-1-F7501Q003

Aims

To provide basic knowledge on the relationship between man and the geological environment.

The course addresses the concept of environmental sustainability applied to geological resources; in this context, the main geological resurgences and the impact that man has on these resources will be analyzed. Among the geological resources is also included the concept of landscape, prodrome to analyze the principles of spatial planning.

The keys to understanding the environmental sustainability issues applied to the geological environment will be then provided.

Contents

Contents:

1. Introduction to environmental geology
2. Concept of sustainable development

3. Geological resources
4. human impact on the geological environment
5. impact of geological processes on human activities
6. Spatial planning
7. Thematic Cartography

Detailed program

Contents:

1. Introduction to environmental geology

- What is geology?
- What is an environment?
- What is environmental geology and what it does

2. Concept of sustainable development

- Definition
- Human population growth Sustainability triangle
- Economic approach
- Environmental approach
- Socio-cultural approach

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- Indicators
 - Spatial planning processes: methods and process evaluation

o Environmental sustainability concepts and their application to environmental geology

- Groundwater
- Soil
- Subsoil
- Precautionary principle

3. Geological resources

- Energy resources
- Policies and perspectives
- Hydrocarbons
- Solid fuels
- Geothermal energy
- mineral resources
- Water resource
- soil resource
- Geological landscape and geo-sites
- underground space

4. human impact on the geological environment

- man as a geological environment
- removal of mineral substances and their impact
- vulnerability of aquifers
- groundwater collection
- quality and quantity - PTUA
- groundwater pollution
- concept of buffer strips for wells
- use of surface water and groundwater for energy purposes: hydroelectric power stations and heat pumps

5. impact of geological processes on human activities

- hydrogeological hazard
- extreme hydrogeological events
- floods
- rockslides
 - avalanches
 - earthquakes
 - volcanoes
 - risk management and control (gisotti chap.6)

6. Spatial planning

- PRG, PGT
- VAS

7. Geothematic Cartography

Prerequisites

Elements of Geology, Petrography, Geophysics and Physical Geography.

Teaching form

- 48 hours of Lessons tutorials, 6 credits

- 2' hours of Laboratory experiences, 2 credits

For the duration of the Covid-19 emergency period, the lecture classes will take place remotely.

Textbook and teaching resource

Semester

first semester

Assessment method

The student must prepare a written report on a topic chosen by him/her, concerning the topics dealt with during the course, which is then discussed with the teacher on the day of the oral exam.

The object of the evaluation will be to verify that the theses and topics covered have a logical filum that starts from the objectives and ends with the conclusions.

During the Covid-19 emergency period, oral exams will only be online, using the WebEx platform. The e-Learning page of the course will contain a public link to allow the potential audience to witness the exam.

Office hours

every day on appoitment
