



UNIVERSITÀ  
DEGLI STUDI DI MILANO-BICOCCA

## SYLLABUS DEL CORSO

### Laboratorio 5 - Analisi di dati geo-referenziati

2223-3-E4001N105

---

#### Learning objectives

GIS (Geographic Information Systems) tools represent today one of the richest resources for the analysis of the spatial aspects of human phenomena. Born among the “hard sciences”, they are nowadays used in a multidisciplinary manner and applied in diverse scientific contexts. Sociology is one of these and objective of this laboratory is to show the potentials for GIS application to the discipline, introducing students to the “realm” of Geographic Information Science”, making them able to apply these knowledge and produce spatial analysis of ecological data.

#### Contents

The laboratory aims to:

1. Show what GIS are and what can be their potential use and what are in concrete the most common tools and softwares adopted by the scientific community.
2. Transmit practical knowledge of the GIS tools, making students able to manage the main sources of spatial data and the basic techniques for their representation and analysis.

#### Detailed program

The laboratory is composed of three main part:

1. Introduction to the GIS: their history and evolution; key concepts useful to profitably manage the tools; review of the main softwares available.

2. Introduction to ecological data: review of their characteristics and use; review of the sources available; online pre-defined services for their use.

3. Learning and application of the basic techniques for the spatial analysis of data: join; selection; choropletes; kernel density; editing.

## **Prerequisites**

Basic knowledge of data analysis and of the main Office packages (Excel in particular).

## **Teaching methods**

Teaching lessons and exercises.

Lessons will always take place in the classroom (computer lab) and in person. In parallel, a virtual laboratory will be created to allow those who do not have a sufficiently powerful pc to access the virtual ones of the university (also accessible from home, for exercises).

From time to time, depending on the distance of one meeting from the other, exercises may be assigned at home, which, if properly performed, can become part of the final essay.

## **Assessment methods**

Final paper (short individual thesis)

## **Textbooks and Reading Materials**

Most of the materials will be available online and based on open contributions, while the most theoretical part will be carried out and accessible thanks to the course slides.

In order to deepen the course themes, the following texts are suggested:

Boffi M. (2004), *Scienza dell'informazione geografica. Introduzione ai GIS*, Bologna: Zanichelli.

Pintaldi F. (2003), *I dati ecologici nella ricerca sociale. Usi e applicazioni*, Roma: Carrocci.

## **Sustainable Development Goals**

SUSTAINABLE CITIES AND COMMUNITIES

---

