UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Laboratory 5

2021-3-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.

Scenario 1 (in case it will be possible to attend lectures in classroom):

The lessons will always take place in the classroom and in attendance, with delivery of exercises to be held and sent within the next lesson.

Scenario 2 (need of virtual teaching):

The lectures will be taken asynchronously, by uploading videolessons recorded the day before the scheduled lesson.

Each lesson includes a final delivery, to be sent the day before to the next, in the form of an exercise on the topics discussed in the video.

Few virtual (synchronous) "in presence" meetings will be agreed with the class to verify the need to take up unclear topics or solve the problems encountered in the individual study.

The request for individual meetings is always possible.

Assessment methods

Final paper (short individual or group 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.