

# GEOGRAPHICAL INFORMATION SYSTEM (GIS) - BASIC KNOWLEDGE

**LEVEL:** MASTER 1

**PERIOD:** SEMESTER 2

**LANGUAGE:** EN

**ECTS:** 3

**TEACHER/COORDINATOR:** SÉBASTIEN DÉTRICHÉ



## 1-Main objectives

The learning outcomes are to acquire basic skills on GIS by using the QGIS software (free and open source):

- › understanding different GIS fields of application;
- › mastering the basic tools of the QGIS software;
- › understanding data (vector and raster) and metadata, deal with spatial data;
- › making of thematic maps (with review of cartography rules);
- › knowing how and where acquiring data (data sources);
- › learning how to solve environmental problems and apply GIS solutions (polluted sites, soil science, agriculture, landscape management...)

## 2-Skills developed

- › Know how to use a GIS software (QGIS)
- › Use GIS to deal with environmental issues

## 3-General content

Guided step-by-step practical work on the software with exercises. Students will work with worldwide and regional (Nord-Pas de Calais) data.

- › What is a GIS? How to deal with spatial data? Fields of application, basic knowledge about GIS
- › The QGIS interface. Dealing with layers and their properties (graphic and attributory), coordinate systems
- › The table of contents, toolbars, definition queries
- › Symbology and labelling
- › Georeferencing, coordinate systems
- › Editing and layout (creating maps)
- › Making selections
- › Joining data (from the database to the GIS)

## 4- Evaluation

Individual exam on the software