

# GEOSTATISTICS

**LEVEL:** MASTER 1

**PERIOD:** SEMESTER 2

**LANGUAGE:** EN

**ECTS:** 3

**TEACHER/COORDINATOR:** SÉBASTIEN DÉTRICHÉ



2019-2020

## 1-Main objectives

- › Manage a polluted site study, from the preparation of the sampling campaign to the creation of maps using geostatistics;
- › See how geostatistics can help make decisions when dealing with polluted site studies.

## 2-Skills developed

- › Preparing and doing a sampling campaign on polluted sites
- › Basic knowledge on how to use ArcGIS and the geostatistical analyst tool
- › Spatialize data using geostatistics techniques = interpolations;
- › Basic knowledge of kriging and variography;
- › Mapping pollution by taking into account interpolation uncertainties;
- › Creating probability maps.

## 3-General content

Practical work and case study by group

- 1 – Field sampling methodology (around the former Metaleurop smelter)
- 2 – Introduction to the ArcGIS software (GIS refresher)
- 3 – Introduction to geostatistics (definitions, applications), the Geostatistical Analyst tool
- 4 – Exploratory Data Analysis (basic statistics)
- 5 – Variography and prediction (ordinary kriging)
- 6 – Exercises and case study
- 7 – Self-directed time to prepare the oral presentation of the case study

## 4- Evaluation

- › Group report on the field investigation (field sampling)
- › Group presentation about the case study