

ES7029 GIS and the Earth System (3AUs)

In this course, you will become familiar with Geographic Information Systems (GIS) for Earth sciences. You will use an open-source GIS software to perform common tasks required in the study of Earth systems, including importing and exporting datasets, producing scientific-grade maps, and performing basic to advanced geospatial analyses. Given the rapid progress in GIS science and technology, you will also learn how to find online resources to perform tasks required in diverse industries (urban planning, landscape architecture, scientific research). The course is primarily targeted at Environmental Sciences graduate students, with applications to Earth science, ecology, and society.

This course will cover the use of Geographic Information System (GIS) to explore Earth systems science. The course will start by introducing theoretical foundations of GIS, with concepts such as projections, geographic coordinate systems, etc.

The students then learn and practice the skills to conduct basic to advanced analyses and produce scientific-grade maps in a GIS software. The majority of the course uses the open-source software QGIS, with one tutorial dedicated to alternative software.

Finally, the students work on an independent group project, documenting an Earth Science event and applying the skills they learnt during class.