**ENV 3110 Geographical Information Systems (GIS) applications (4 CU)**

**Description**

This course builds on the second year course ENV 2113. It mainly deals with applications of GIS in the environment that we live in.

**Objectives**

The main objective of this course is to enable students describe and interpret GIS information and apply it in their daily activities

**Learning out comes**

By the end of the course students should be able to:

* Apply GIS in spatial data processing and management
* Interpret GIS information and how it is used in planning

**Intellectual, Practical and transferable skills**

* Creative and innovative
* Problem solving
* Analytical
* Communication

**Teaching and learning patterns**

* Use of practical examples
* Case studies
* Class discussions
* Lectures
* Group presentations

**Indicative content**

* Review the major functions of GIS (Spatial data capture, storage manipulation and visualization).
* Applied GIS functionalities for spatial data management and handling.
* Applied GIS functionalities for spatial data processing and analysis covering aspects like classifications, overlay operations, neighborhood and interpolation operations and remote sensing and photo and image analysis.
* Decision making under a GIS and Environmental Management and Planning with emphasis on modeling, simulations and suitability analysis through *a case study*

**Assessment Method**

The assessment method is structured to include course work, and final examination. Course work consists of assignments, reports, practicals and tests and accounts for 40% of the final grade. The final examination will account for 60% of the final grading

**Core Reference materials**

# Molenaar M. (1998): An introduction to the theory of spatial object modelling for GIS, *Taylor and Francis*

* **Environmental Systems Research Institute** (1998): ArcView GIS: the geographic information system for everyone: para utilizar el ArcView, *Environmental Systems Research Institute*
* **George Christakos, Patrick Bogaert, Marc L. Serre** (2001): Temporal GIS: advanced functions for field-based applications: Volume 1, *Springer*