

GEOG.604. FUNDAMENTALS OF INTEGRATED LAND AND WATER INFORMATION SYSTEM 3(2-1)

Course Objectives

To train students in Ilwis GIS, and practical exercises in preparation, integration and analysis of geo-spatial data.

Learning Outcome

The students will be able to use the ILWIS software for preparation of maps and will transform data on these final maps.

Course Outline

- 1. Introduction**
 - ILWIS
 - Displaying geographic data
 - Structure of spatial data in ILWIS
- 2. Displaying Maps and Layer Management**
 - Domains
 - Coordinates
 - Representation and table
 - Attribute data
 - Pixel information
- 3. Spatial Data Input**
 - Spatial data management
 - Attribute data handling
- 4. Image Processing**
 - Spatial and non-spatial data imports
 - Spatial data analysis
 - Retrieval
- 5. Classification and Measurement operations**
 - Spatial data analysis
 - Overlay operations
 - Spatial data analysis
 - Neighbourhood and connectivity operations using digital Elevation Models, geo-statistical tools
- 6. Presentation of results**

Note: The theory is supplemented by laboratory work.

Recommended Books

1. ITC (2001) “*ILWIS Academic User’s Guide*”. International Institute for Aerospace Survey and Sciences, Netherland.
2. Aronoff, S. (2005) “*Remote Sensing for GIS Managers*”. ESRI Press, New York.
3. ITC (2002) “*ILWIS Application Guide*”. International Institute for Aerospace Survey and Sciences, Netherland.
4. Maginr, D. J. (1991) “*Geographic Information System*”. Longman, London.