

GEOG2090 Introduction to Geographic Information Systems (6 credits)

Course Teacher: Professor P C Lai

Objectives

To provide students a basic understanding of the concepts and techniques of GIS and their application to solve spatial problems that affect our society.

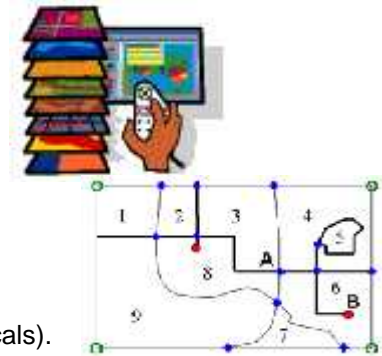
Course Synopsis

This course introduces students to the computer-assisted techniques of geographic data analysis, collectively known as GIS, which involve the overlaying and merging of spatial data layers. The principles of such an approach will be discussed focusing on the nature of the spatial data, raster and vector data structures, GPS data collection, data transformation and geocoding, spatial overlay techniques, and accuracy evaluation of spatial databases. Students must complete five simple exercises embodying the application of the GIS concept in a real-life situation.

This course is a pre-requisite for follow-up courses in geographic information systems.

Lecture Topics

- Introduction to GIS and some definitions
- Data types and structures
- Basic database management functions
- GIS in action



Practicals

Five laboratory practicals.

Assessment

Examination (1&1/2 hours) 40%; Coursework 60% (consists of 5 practicals).

Learning Outcomes

Knowledge:

- Concepts in GIS and database management
- GIS functions and limitations
- GIS requirements and application settings

Skills:

- GIS operational skills
- Database management skills
- Map presentation skills



Recommended Reading List

1. Bernhardsen, T. (2002). *Geographic Information Systems: An Introduction*. 3rd Edition. New York: Wiley.
2. Clarke, K. (2011). *Getting Started with Geographic Information Systems*. 5th Edition. Upper Saddle River, N.J.: Pearson Prentice Hall.
3. Jensen, J.R., Jensen, R.R. (2013). *Introductory Geographic Information Systems*. Boston: Pearson.