

LECTURE 1
PRINCIPLES OF GEOGRAPHICAL
INFORMATION SYSTEMS I- GEO 362
 FT Okyere

OBJECTIVES

- Principles of GIS

RESOURCES

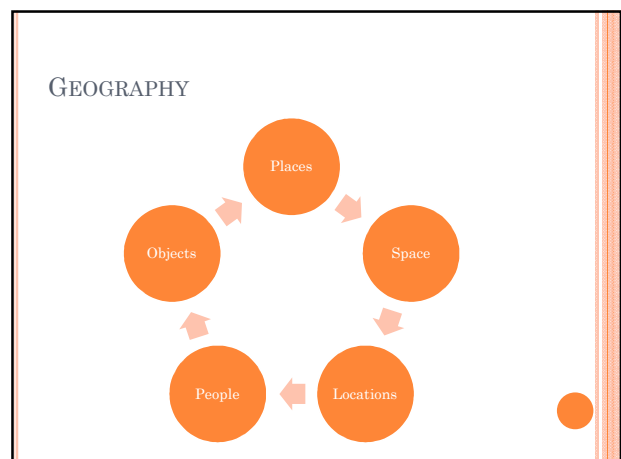
- Books
 - Principles of Geographical Information Systems(PA Burrough and Rachael A. McDonnell)
 - Geographic Information Systems and Science(Paul Longley and Goodchild)
 - Any other GIS book.
- Lecture Hand out (Signed)- Gh¢XX.00 (Estimate)
- GIS Lab- Computer pool
- Additional Materials
- Internet- carefully!

GEOGRAPHICAL INFORMATION SYSTEMS

- Geography.....
- Information
- System

WHAT IS GIS ?

- Geography (**Geography** (from **Greek γεωγραφία - geographia**, lit. "earth describe-write"^[1]) is the science that deals with the study of the **Earth** and its lands, features, inhabitants, and phenomena.)
 - lands (places)
 - features (things or objects)
 - inhabitants (People, Animals)
 - Phenomenon (activities and occurrences)



GEOGRAPHY



GEOGRAPHY



GEOGRAPHY- ANYTHING ANYWHERE



GEOGRAPHY[LOCATION OR ELEVATION]

- Ghana lies between latitude 4° and 11° north of the equator, on the West Coast of Africa- Location
- Ghana is a lowland country- Elevation



INFORMATION

- Not Data!
- Makes Sense
- Derived from Data
- Information is Important



SYSTEM

- A group or combination of
- interrelated, interdependent, or interacting elements forming a collective entity
- OR
- a methodical or coordinated assemblage of parts, facts, concepts, etc



WHY GIS?

- Daily Routine of activities needs tracking
- Everything happens over space
- Knowing where things are is importance
- Humans are limited in solving problems cognition
- Military- deployment of equipment and expertise
- Forestry- where to cut in order to control vegetation
- Businesses- Meet Gov. regulations on pollution and interstate trade
- Floods & Hurricanes- Emergency resps teams

WHY GIS?

- In Telecommunication- when the service is off, what and where is the problem?
- GIS helps us keep track of events, activities and also WHERE?

COURSE OUTLINE

- **Definitions and Concepts**
- **Data Sources and Acquisition**
- **Methods of Data input**
- **Data Structures and Data Models**
- **Concept of Map Projection**
- **Geocoding Methods**
- **Data Management and Display**

COURSE OUTLINE

- **Vector- based GIS**
- **Raster- based GIS**
- **Introduction to hopefully ArcGIS, Ilwis, Idrisi etc.**

ASSESSMENT

- End of Semester Xam /Midsem
- 70/30%

?

- Questions