Geographical and Mapping Information Management System Theory and Practice Software Training

Introduction:

This course describes tasks and issues that project managers must address at different stages of GIS project development by striking a balance between theory and practice. Topics include strategic planning, work program development, project management techniques, budgeting, staffing, sustaining program support, and managing consultants and vendors. This course presents an overview of the successful and unsuccessful techniques for implementing GIS. Issues covered include how to gain organizational support and how to revive floundering GIS programs. The participants will be working in small discussion groups to address issues pertinent to real case studies. The course will be based on real world examples. It is a must for anyone embarking on a GIS project, involved with a less than satisfactory GIS, or who is seeking ways to improve a successful implementation.

At the end of the course, the participants will be able to:

- Gain knowledge in managing a GIS Project in all its phases: User Needs Survey, Needs Assessment, Database Design, System Design, Data Conversion, Application Development, and Training.
- Get hands on experience in managing a GIS project
- Acquire all skills needed to prepare a GIS project documentation such as request for proposal, proposal, and various project deliverable documentations.
- Better understand the issues of staffing and budgeting, team work, and consultant-client relationship through real world case studies

Course Objectives:

- Introducing the GIS technology and its basic principles.
- Highlighting the link between GIS and the related sciences.
- An overview to the GIS package "ARC/VIEW"
- Discussing how to pick a proper geographical Information System

Course Outline:

Bidding a GIS project

- Introducing GIS Technology Advances
- Understanding and Formulating a Typical RFP
- Initiating the Formal Negotiation Process

Implementing the Project

- Setting Milestones
- Managing Personnel
- Adopting Technology
- Tackling Problems
- Setting Expectations

Evaluation and Documentation

- Writing Deliverables
- Submitting Progress Reports
- Looking Ahead

Introduction to GIS

- What is GIS?
- Roots on GIS.
- GIS as a product of well-defined sciences.
- What GIS can do.
- Strategies for the introduction of GIS.

Data sources of GIS

- Nature and sources of spatial data.
- Concepts of Digital Mapping (DM).
- Data capture techniques.
- Data structure and restructure.
- DATA RESTRUCUTRE.
- Surveying and GIS (GPS, Remote Sensing, Projection, scale).

Introduction to Database Design

- Database and Database management system.
- Database concept
- Concept of the Relational database.
- SQL (Structured Query Language).
- Logistics
- Teaching methods
- ArcGIS products
- ArcGIS functionality
- ArcGIS desktop applications
- ArcGIS extensions
- Working with geographic data
- Storing geographic data
- ArcGIS spatial data formats
- ArcGIS tabular data formats
- Features and topology
- Spatial relationships with shared geometry
- Spatial relationships with coincident geometry
- Storing spatial relationships
- Using Arc Catalog
- Adding tables from existing sources
- Setting viewable data
- Managing file types visible in Arc Catalog
- Tables options
- Raster options
- Searching for data
- Load class database
- Working with layers and maps
- Setting Arc Map options
- Creating quantitative displays
- Choosing a classification method
- Using natural breaks
- Using quantile and equal interval
- Using standard deviation
- Excluding features from a classification
- Normalizing your data
- Graduated and proportional symbols
- Showing quantity with dot density
- Displaying multiple attributes

- Symbology
- Style sheets
- Using the Style Manager
- Creating custom symbols
- Creating custom lines and markers
- Using the Advanced Drawing Options
- Ways to create a map
- Building templates
- Changing templates
- Exporting a map