

AITCV – GEOVIET ENVIRONMENTAL TRAINING PROGRAM IN 2007

COURSE : Application of GIS in Environmental Management
SCHEDULE : 27-31 August 2007
DURATION : 5 days

BACKGROUND

Geographic Information Systems (GIS) technology is used to manage and interpret geographic data, and is widely recognized as an essential tool in diverse fields such as forest management, urban planning, environmental management and environmental studies. GIS has revolutionized geography, geology and environmental science. There is a huge amount of spatial data, including images from Earth observation satellites containing information about our environment. These data are essential to effective management of our environment and resources. The combination, analysis and presentation of these data are made possible by GIS.

Together with remote sensing, GIS is an essential tool to the modern geographer, geologist and environmental scientist. It plays key roles in research, resource management, policy formulation and decision-making. Virtually all governmental, non-governmental, commercial and earth science fields innovatively and actively make use of this technology. In many cases GIS tool is used so that environmental considerations can be better incorporated into socioeconomic development enabling a balance between the two. In particular, the application of GIS on environmental management will allow policy makers and planners to effectively manage the environment as well as the existing natural resources so the sustainable development will be achieved.

AITCV in cooperation with GeoViet Consulting is offering this training course in an attempt to induce GIS into environmental science. This is an introductory course on GIS for participants majoring in environmental related issues. It discusses how GIS would help them in organizing, manipulating, and analyzing scientific data that are spatially referenced. Participants will learn how to create their own maps, and how to use GIS software to analyze geographic problems and learn techniques that can be applied to environmental management, as well as to a wide variety of other subject areas.

OBJECTIVES

The main aim of the course is to provide participants with the necessary understanding of GIS concepts and theory, as well as practical skills, so that they are able to make decisions about how to approach a GIS-related problem and transfer their understanding to any GIS software. It also helps participants to learn how to generate information from remote sensing and data stored in geographic information systems to support environmental planning and management

This course is designed with the following objectives:

- To introduce participants basic knowledge about GIS and its application
- To provide participants with essential techniques/knowledge for applying GIS in environmental management
- How necessarily and effectively GIS applies in environmental management as a whole
- How GIS supports to making decisions in environmental management

TARGET PARTICIPANTS

This course is aimed primarily at staff from all levels of management; project planners and managers from counterpart governments and agencies. It is also designed for technical staff employed by environmental planning and management agencies.

METHODOLOGY

This course emphasizes the use of GIS in managing the environment. Environmental issues are discussed and data requirements defined. Case studies are presented to illustrate the use of GIS for integrating remotely sensed imagery with ancillary data layers to address specific environmental problems. All exercises and case studies are based on material from real-world applications from developing countries.

The course will be conducted in Vietnamese.

**COURSE SCHEDULE:
APPLICATION OF GIS IN ENVIRONMENTAL MANAGEMENT**

DAY	TIME	CONTENT
DAY 1 2 <i>Instructors</i>		<ul style="list-style-type: none"> ▪ Registration - Opening
	Morning 8:30 - 11:30 a.m.	<ul style="list-style-type: none"> ▪ Introduction to GIS – Definition, functional elements, system requirements and applications in environmental management (TH) ▪ Demonstration of ArcGIS software package with an environmental GIS database (TH)
	Afternoon 1:30 - 4:30 p.m.	<ul style="list-style-type: none"> ▪ Environmental data requirements: RS and GPS data sources (TH) ▪ GIS Lab-exercise 1 – Guidelines on using example environmental data in GIS (HS)
DAY 2 2 <i>Instructors</i>	Morning 8:30 - 11:30 a.m.	<ul style="list-style-type: none"> ▪ Basic GIS concepts: spatial data structure, database concept and mapping concept (TH) ▪ GIS functionality: data input, database management and output (TH) ▪ Demonstration of spatial data management, data integration (vector, raster, image) in ArcGIS (TH)
	Afternoon 1:30 - 4:30 p.m.	<ul style="list-style-type: none"> ▪ GIS Lab-exercise 2 – Examples of a practical environmental database (HS) ▪ Group discussion: Users’ need and data needs in environmental application (HS)
DAY 3 2 <i>Instructors</i>	Morning 8:30 - 11:30 a.m.	<ul style="list-style-type: none"> ▪ Exploring and analyzing GIS data for environmental management (TH) ▪ Demonstration on searching, querying, presenting environmental data and preparing a map layout in ArcGIS (TH)
	Afternoon 1:30 - 4:30 p.m.	<ul style="list-style-type: none"> ▪ Spatial analysis and GIS-based multi-criteria analysis for environmental studies (TH) ▪ Demonstration on spatial data analysis – map algebra with ArcGIS in an urban environmental planning applications (TH)
DAY 4 2 <i>Instructors</i>	Morning 8:30 - 11:30 a.m.	<ul style="list-style-type: none"> ▪ Practical GIS-based multi-criteria analysis (II) with selected environmental applications (HS) ▪ GIS Lab-exercise 3 – Multi-criteria analysis for aquaculture planning applications (HS)
	Afternoon 1:30 - 4:30 p.m.	<ul style="list-style-type: none"> ▪ GIS Lab-exercise 3 (continue) – Multi-criteria analysis for aquaculture planning applications (HS) ▪ GIS project implementation and management (TH, HS)
		<ul style="list-style-type: none"> ▪ GIS project implementation and management (TH, HS)
DAY 5 2 <i>Instructors</i>	Morning 8:30 - 11:30 a.m.	<ul style="list-style-type: none"> ▪ Field Trip to Marine Conservation Area – Hon Mun Island (HS) ▪ Discussions and grouping for GIS mini-projects (HS)
	Afternoon 1:30 - 4:30 p.m.	<ul style="list-style-type: none"> ▪ Group presentation and discussion - GIS project management - Nha Trang Oceanography Institute (HS) ▪ Course Wrap-up and distribution of certificates (HS)

Instructors: (TH) – Dr. Tran Hung of GeoViet Consulting Co. Ltd. & (HS) – Mr. Tong Phuoc Hoang Son of Nha Trang Institute of Oceanography