

2nd COURSE ON APPLICATION OF GEOINFORMATICS IN DISASTER MANAGEMENT

COURSE REPORT

The Indian Space Organization (ISRO) Sponsored one month long 2nd course on “application of Geo-informatics for Disaster Management” was conducted from 11th July to 9th August 2006 at Geological Survey of India Training Institute, Hyderabad. Day wise course schedule is placed at annexure-1. The following fourteen participants attended the Programme.

The training was dealt in four modules namely; i) introduction to remote sensing, ii) introduction to Geographic information system (GIS) and Global Position System (GPS), iii) application and case studies and iv) project work. The course spanning 27 working days (including one-day field excursion) comprised lectures followed by demo and practical exercises along with adequate hands on practice. High-end computer system with Arc GIS and ERDAS Imagine soft wares were provided for hands on training.

Under Remote Sensing module, fundamentals of satellite Remote Sensing and, multispectral Remote Sensing in visible, infrared thermal and microwave regions were covered. Lectures followed by practical exercises were covered on the techniques of interpretation of remote sensing data for delineation of various geomorphological, lithological and structural as well as land use and land cover, hydro-metrological, geoenvironmental and anthropogenic features. Practical exercises were carved out covering i) cyclone hazard prone coastal zone, ii) flood hazard prone river valley, iii) Landslide hazard prone Himalayan terrain, iv) earthquake prone western hat area, v) mining hazard belt in Goa, and vi) urbanization hazard area.

Under digital image processing and digital photo-grammetry lectures and demonstrations on different image processing techniques, involving image loading, sub-image attraction, image rectification, data enhancement techniques covering radiometric, spectral and spatial techniques; multi-spectral classification, generation of digital elevation model and derivative maps of slope and aspect map were dealt with using ERDAS imagine software.

Under Geographical Information System, theory demonstration on map and spatial data concepts and analysis were dealt with in detail using Arc-info software. The topics covered in the GIS module included data base concepts and RDMBS. Introduction to GIS, spatial data editing and topology, digital cartography and visualization; and principles and Application of SAR-interferometry. The participants were also introduced to the latest mapping techniques on mobile mapping with GPS and Palmtop

For the benefit of the participants and to familiarize them with the utility of remote sensing and GIS in the field of natural hazards like earthquakes, landslides, environmental disasters such as cyclones, floods and hydro meteorological hazards namely drought and desertification, special lectures with case studies from eminent and experienced Geoscientist from ISRO, GSI, NRSA were arranged. Some of the lectures were highly informative and presentations and presentations were scintillating.

After attaining a fair degree of confidence in visual and digital image interpretation techniques, the trainees were given a project work in Natural hazard area. After completion of the project work. The trainees were grouped into five batches and assigned a topic for each group for presentation. The topics were image rectification and resolution merge, digital enhancement techniques, Extraction of thematic maps, generation of digital elevation. The performance of their presentation and discussions were extremely impressive. An evaluation test was conducted to assess the trainees and the results are encouraging.

With the objective of boosting the confidence level in the remote sensed data interpretation of various geological and land features, one-day field traverses to Nagarjunasagar area was arranged. The participants expressed their satisfaction over the field excursion and rated very good to excellent as reflected in their feedback. The planning and execution of all the modules in the course was rated as very good to excellent. The participants expressed their satisfaction in conducting the theoretical and practical exercises in a systematic way and rated very good as reflected in their feedback. Overall the trainees have rated the training Programme as very good to excellent. Synthesized feedback together with individual feedback forms are placed at appendix. II. Overall assessment and the condensed suggestion of the trainees are listed below