



GOVERNMENT OF INDIA
GEOLOGICAL SURVEY OF INDIA TRAINING INSTITUTE
HYDERABAD



SCHEME: ITEC

PROPOSED YEAR: 2026-27

Course Name	Duration	Maximum Seats	Minimum Seats	Stream
Fundamentals of Geophysical Mapping and Geological Interpretation	20-11-2026 to 03-12-2026	20	10	Engineering and Technology

COURSE DETAILS

Course Name	Fundamentals of Geophysical Mapping and Geological Interpretation
Start Date	20-11-2026
End Date	03-12-2026
Aim & Objective	To enable Geoscientists to understand the Geophysical Mapping, survey objectives and draw meaningful Geological Interpretation.
Mode of Evaluation	Evaluation test and Presentation
Education Qualification	Graduate in any subject in Earth Science (Geology, Geophysics, Hydrogeology, Environmental Science, Surveying, Geography etc.)
Work & Experience	3 to 5 Years
Target Group	Scientists, Teachers, Technicians, etc. dealing with Geoscientific Studies(Earth Sciences)

COURSE OVERVIEW

The *Fundamentals of Geophysical Mapping and Geological Interpretation* course is designed to provide participants with a comprehensive understanding of key geophysical survey methods, including Gravity, Magnetic, and DGPS surveys. Concept of various latest geophysical techniques will also be discussed like Magnetotelluric, Electromagnetic and Drone based Geophysical survey. The course will cover the essential parameters measured in each type of survey, with an emphasis on data acquisition, processing, and interpretation. Through practical demonstrations and hands-on sessions, participants will gain experience with the instruments used in geophysical surveys as well as the software tools for data processing. Additionally, participants will learn to integrate various maps and geological data to enhance their interpretation skills. These surveys provide valuable insights that influence decisions in agriculture, energy, and natural resource management.

COURSE CONTENT

- **Introduction:** Overview of different Geophysical Methods
- **Geophysical survey:** Basic concept of Gravity, Magnetic, DGPS Survey
- **New Technology:** MT(Magnetotellurics), EM and Drone Based Geophysical Survey
- **Survey:** Field planning and design of Survey
- **Field visit:** Acquisition of Geophysical data in field
- **Data processing:** Preliminary processing of data using excel followed by processing in Geosoft software (Oasis Montaj)
- **Grid and Map Preparation:** Concept of interpolation and different Gridding Algorithms
- **Data visualization:** display of maps and data in map windows along with scale, colour legend bar, contours
- **Interpretation:** Integration of different datasets and Geological Interpretation.
- **Cultural/Heritage site visit:** Visit to scientific organizations and Cultural Heritage sites to give exposure to various type of scientific studies as well as culture and tradition of India.
- **Indic Knowledge System:** Introduced Yoga and Meditation
- **Practical:** Practical on handling of instrument as well as hands on each processing method will be imparted.
- **Evaluation test and Presentation:** Evaluation test will be taken at the beginning and end of the course followed by presentation by participants on various technical topics.
