THREE MONTHS CERTIFICATE COURSE

3 month courses are designed specifically focusing on particular technology and concept. A practical knowledge is very crucial in order to understand the concept deeply to explore the innovative use of the technology and its application areas.

Why choose this course?

This is a platform where we can help you to fill the gap between academics and industry by providing quality training as per the industry requirements which results in "Ready for Industry" skilled and trained professionals.

Technologies Covered

We have three technologies which you can learn different modes of study accordingly:

Three months program in regular weekdays

You will learn:

- Geographical Information System (GIS)
- Remote sensing
- Digital Photogrammetry
- Digital Image Processing
- Modern Surveying Technology (GPS)
- LiDAR

Course duration:
Two months technical training and one month live project training.

Three months program in regular weekends

You will learn:

- Geographical Information System (GIS)
- Remote sensing
- Digital Photogrammetry
- Digital Image Processing
- Modern Surveying Technology (GPS)
- LiDAR

Course duration:
Three months technical training.

Three months program in online weekend

You will learn:

- Geographical Information System (GIS)
- Remote sensing
- Digital Image Processing
- Modern Surveying Technology (GPS)
- LiDAR

Course duration:

Three months technical training.

Minimum eligibility

- Graduation/ (10+2+3) or higher degree.
- Engineering (IT, Computer Science, Civil Engineering).
- Geography, Geology, Disaster management, Agriculture management.

Complete Curriculum

- Fundamental of Geo-informatics
- Fundamental of GIS/Photogrammetry
- Collecting, acquiring and verifying spatial data
- Different technology to generate, integrate, analyze and visualize spatial data
- Apply practical skills by working on international standard projects
- To carry out an independent final project and presentation

Table of Contents

1. GIS: Learn GIS to make maps and perform various analysis on Spatial data.

- Introduction and objectives of GIS
- Concept of Geospatial data
- GIS data Sources
- GIS data models
- Geo-referencing
- Projection and scaling
- Making GIS layers in different platforms
- Digitization (Point, Line, Polygon)
- GIS data conversion / Importing and exporting of data from one to another platforms
- Data collection for GIS base Mapping
- GIS data linking (Spatial and Non-spatial)
- Topology building
- Query building
- Map Composition (Thematic Mapping)
- Base Map generation techniques for surveying
- Land use and Land cover Mapping
- Making Digital database /Making Geodata Base of Land Records
- Analysis for GIS (Buffer, Overlay, Watershed, Network)
- Applications of GIS layers

2. Remote Sensing: Learn Remote Sensing to know about and acquire the satellite Imageries.

- Introduction and objectives of RS
- Electromagnetic Spectrum
- Interaction with earth surface
- Spectral signature
- Platforms: ground base, air borne, space borne
- Sun-synchronous and geostationary satellites
- Indian Remote Sensing Satellites
- Satellite data types: FCC and PAN images
- Satellite Image study in Different bands
- Stacking of different bands of Image
- Subset, mosaic of satellite imagery
- Multi spectral concept of image interpretation
- Application of remote sensing in various fields

3. LiDAR:

- Basic concept of LiDAR Technology
- Principle of LiDAR Technology
- Types of LiDAR data
- Basic architecture of LiDAR technology
- LiDAR System Specification
- Data Storage
- Software for Quality Assessment
- Introduction and objectives of LiDAR data processing
- Products of LiDAR application
- Contour generation
- Source of Errors in LiDAR data
- Application of LiDAR for mapping and planning, volumetric analysis, power sector, smart city, topographical study

4. Digital Image Processing: Learn DIP to edit the satellite Imageries in order to make a better interpretable one. By applying classification on Images, one can calculate the area for various classes.

- Introduction and objectives of DIP
- Concept of Digital Image
- Digital data formats
- Data conversion
- GCP collection
- Image corrections (geometric, radiometric and atmospheric)
- Image enhancement techniques (Filtering, stretching, smoothing)
- PCA, TCA Analysis
- Resolution merge
- Spectral signatures
- Classification techniques and algorithm
- Recoding
- Accuracy assessment
- Land use land cover
- Change detection
- Application in agriculture, forest etc.

5. Photogrammetry:

- Fundamental concept and basic information and specification of Aerial photography.
- Introduction and objectives of Aerial camera, Metric camera

- Camera calibration for Aerial Photography, Aerial film and types of Aerial camera lenses and lens distortion
- Geometry, Projection and properties of Aerial Photographs,
- Overlapping on Aerial Photographs and their types,
- Photogrammetric workflow
- Photogrammetric platforms
- Interpretation Elements of Air Photo
- Accuracy, Error, Precision
- Introduction and objectives of Stereo Photogrammetry
- Aerial triangulation
- Generating geospatial datasets
- DEM and orthophoto's generation
- Concept of Mass points and Break lines
- Contours and their types Volumetric Analysis.
- Concept of DEM, DTM, TIN, GRID and DSM.
- Aerial Photo mosaic
- Photogrammetric product and its application.
- Applications of Photogrammetric products for mapping and planning

6. GPS:

- Introduction of Global Positioning System
- Satellite constellation
- GPS signals
- GPS data
- DGPS techniques
- Concept of NAVSTAR,GLONASS, GALILEO system
- Geodesy
- Geoid/datum/Ellipsoid
- Coordinate system
- Map Scale, Scale factors
- Map projections
- GPS segments
- GPS data collection of point, line, Polygon features
- GPS errors and accuracy
- DOP(Dilution of Precision)
- Satellite signals and its strength
- GPS Applications in various field
- Future of GPS