

1 Month GIS Development Training with GVI®

Training Moule GVI®

Copyright 2023©
All Rights Reserved

Course Version 3.0. Version released date September 2023

Bharat

The information provided in this document is exclusive property of GVI® 2023 GIS Vision India. All rights reserved. No part of this training module should be reproduced, distributed, or transmitted in any form or by any means, including photocopying, recording, or other electronic or mechanical methods, without the prior written permission of the copyright owner, permitted by copyright law. For permission requests, contact [gisvisionindiamail@gmail.com].

Important Notice:

The information provided in this training module is intended for educational purposes only. While every effort has been made to ensure the accuracy of the content, GIS Vision India makes no representations or warranties regarding suitability or applicability of the information contained herein.

Users of this training module are encouraged to exercise their own judgment when applying the concepts and techniques presented. Any reliance you place on the information provided is strictly at your own risk, and GIS Vision India shall not be liable for any losses or damages incurred as a result of using this training module. GIS Vision India does not endorse or guarantee the quality, accuracy, or availability of any external resources mentioned.

Please be aware that the field of geographic information systems (GIS) is dynamic, and technology and best practices may evolve over time. It is advisable to stay current with the latest developments in GIS through ongoing education and professional development.

By using this training module, you acknowledge and accept the terms and conditions outlined herein. If you do not agree with these terms, please refrain from using the content provided.

For further inquiries or concerns, please contact us at info@gisvisionindia.com

Table of Contents

1. Introduction to Geographic Information Systems (GIS)

- What is GIS?
- Components of GIS
- Definition of GIS and its significance in various fields.
- Historical development and evolution of GIS technology.
- GIS Components
- Software: Overview of popular GIS software's
- Data types
- Geographic coordinate systems and projections.
- Data models: Vector and raster data structures.

2. Data Acquisition

- Data sources: Maps, GPS, remote sensing.
- Data collection methods: Surveys, digitization, scanning.

3. Remote Sensing (RS)

- Introduction
- Remote Sensing Process
- Passive And Active Remote Sensing
- Electromagnetic radiation (EMR)
- Resolution
- Types of Resolutions in RS
- Spatial Resolution
- Spectral Resolution
- Temporal Resolution
- Radiometric Resolution

4. Introduction to Global Positioning System (GPS)

- GPS/DGPS
- Basic Concepts
- Ways GPS can be used in GIS.
- Method of operation.
- GPS Applications

5. Georeferencing

- Introduction
- Raw Satellite Image (Before Rectification)
- Ground Control Points(GCP)
- Types of Rectification

6. Digitization

- Introduction
- Shapefile and Geodatabase
- Vectorization: Point, line and polygon features
- File extensions in shapefile
- Editing and advanced editing tools
- Components in a shapefile
- Attribute table and data creation

7. Basics Components of Map

- Introduction
- Map Scaling
- Geographic Grids
- Large and Small Scale Maps
- Scale Bars
- Latitude and Longitude
- Datum
- Map Projection
- Types of Map Projection
- Types of Maps
- Topographic Maps
- Large Scale Maps
- Thematic Maps
- Layers of GIS
- Data Sources and Input Techniques

8. Data Representation

- Spatial Data Representation
- Vector data Representation
- Raster data Representation
- Non- Spatial Data Representation
- Attribute Table
- Relational Database Model
- Attribute Data Creation

9. Thematic Maps

- Attribute Data Creation
- Choropleth Maps
- Proportional Symbol Maps
- Dot Density Maps
- Isopleth Maps
- Flow Maps
- Heat Maps
- Thematic Line Maps
- 3D Thematic Maps

10. GIS Data Analysis

- Buffer Analysis
- Overlay Analysis
- Spatial Join
- Dissolve and Merge
- Clipping and Extraction
- Spatial Statistics

11. Data Transformation and Conversion

- Vector to Raster
- Raster to Vector
- Coordinate System Transformation
- Merging and Splitting Data
- Attribute Data Transformation
- Data Extraction and Data Export

12. Remote Sensing Data Processing

- Introduction
- Bands/Channels
- Layer stack
- Band Combinations
- Extraction of Area Of Interest(AOI)
- Digital Elevation Model (DEM)
- Ortho mosaic

13. Image Interpretation

- Introduction
- Visual interpretation vs. digital image processing
- Elements of Visual Image Interpretation
- Types of Digital Image Processing
- Enhancing and analyzing remotely sensed images

14. Remote Sensing Applications

- Urban Planning
- Natural Resource Management
- Forestry

- Land use and land cover mapping.
- Agriculture and crop monitoring.
- Environmental monitoring and change detection.

Disclaimer: The information provided herein is intended solely for general informational purposes only. Any reliance you place on such information is strictly at your own risk. In no event will we be liable for any loss or damage. While we strive to keep the information up to date and accurate, we make no representations or warranties of any kind. Every effort is made to keep the content running smoothly and available. However, we take no responsibility for, and will not be liable for, the content being temporarily unavailable due to technical issues beyond our control. By using this content, you acknowledge and agree to this disclaimer. If you do not agree with these terms, please refrain from using the information provided herein.

Disclaimer for Live Online Training Classes:

The following disclaimer outlines important terms and conditions related to our live online training classes:

1. Educational Purpose: Our live online training classes are designed for educational and informational purposes only. They are not intended to replace professional advice or guidance. Participants are encouraged to consult with qualified experts or professionals for specific and individualized guidance or recommendations.
2. No Warranties: While we strive to provide accurate and up-to-date information during our live online training sessions, we make no representations or warranties of any kind presented during the sessions.
3. Changes and Updates: Content presented during live online training classes may change or become outdated over time. We reserve the right to update, modify, or remove any content without prior notice.
4. Technical Issues: We make every effort to ensure the smooth operation of our online training platform. However, we cannot be held responsible for any technical issues or interruptions that may occur during the sessions from your end. Participants are encouraged to have a stable internet connection and appropriate technology to access the classes.
5. Participant Responsibility: Participants in our live online training classes are responsible for their own actions, decisions, and interpretations of the information provided. We do not assume liability for any direct or indirect consequences resulting from participation in the training classes.
6. Recording and Distribution: Unauthorized recording, distribution, or sharing of training class content is strictly prohibited without prior written consent.
7. Registration and Payment: Registration for live online training classes is subject to specific terms and conditions, including payment [policies](#) and cancellation procedures. Please refer to our registration and payment policies for detailed information.

By participating in our live online training classes, you acknowledge that you have read, understood, and agreed to this disclaimer. For specific questions or concerns related to our live online training classes, please contact our support team for assistance.

