

Land Surveying

A hands-on land surveying program covering modern surveying techniques using Total Station, GPS/GNSS, AutoCAD, Autodesk Civil 3D, and GIS. Students gain practical field experience, digital terrain modeling skills, and mapping techniques essential for civil engineering, construction, and infrastructure projects.

Duration 6 Months	Training Mode Offline Classroom Training	Certification Industry Certificate	Practical Labs 100% Hands-on
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Tools & Tech: AutoCAD • Autodesk Civil 3D • Total Station • Auto Level • GPS / DGPS / GNSS • GIS Software

Detailed Course Curriculum & Modules

MODULE 01 Surveying Fundamentals - Types of Surveys, Principles, Accuracy & Precision - Units, Measurements, Scales & Map Reading - Coordinate Systems, Bearings, Azimuths & Error Adjustment - Chain Survey, Compass Survey & Plane Table Survey - Levelling, Traversing, Contour & Topographic Survey - Boundary Survey, Route Survey & Setting Out Techniques	MODULE 02 AutoCAD for Survey Drafting - AutoCAD Interface, Drawing Setup & Coordinate Input - Layers, Drawing & Editing Tools, Object Snap & Precision - Import Survey Coordinates & Plot Survey Points - Boundary Drawings, Topographic Plans & Contour Drafting - Road Layouts, Site Plans, Plot Subdivision & Utility Layouts - Layout Creation, Plotting Standards & Client Drawing Preparation
MODULE 03 Autodesk Civil 3D - Civil 3D Interface, Survey Database & Point Groups - Import CSV/TXT Data, Coordinate Management & Surface Creation - Digital Terrain Models (DTM), TIN Surfaces & Breaklines - Contour Generation, Slope Analysis & Cut/Fill Calculations - Alignments, Profiles, Cross Sections & Corridors - Survey Drawings, Surface Reports & Quantity Reports	MODULE 04 Total Station & Digital Survey Instruments - Total Station Components, Calibration & Instrument Setup - Traverse Survey, Radiation, Resection & Stake Out Methods - Coordinate, Distance, Angle & Elevation Measurement - Building Layout, Column Marking & Road Setting Out - Topographic Survey, Contour Survey & As-Built Survey - Survey Data Download, Export Formats & Field Data Processing
MODULE 05 GPS / GNSS Surveying - GPS & GNSS Fundamentals, Satellite Systems & Accuracy Concepts - Coordinate Systems, Datums & Map Projections - Receiver Setup, Base & Rover Configuration - RTK Survey, Static Survey & Differential GPS (DGPS) - Control Point Survey, Navigation & Waypoint Collection - Data Download, Post Processing & Export to AutoCAD/Civil 3D	MODULE 06 GIS — Geographic Information System - GIS Fundamentals: Raster & Vector Data, Spatial Data Models - Coordinate Reference Systems & Attribute Data - Layer Management, Georeferencing & Digitization - Spatial Queries, Buffer Analysis, Overlay & Thematic Mapping - Applications: Land Records, Utility & Infrastructure Mapping - Shapefiles, Geodatabases, Data Import/Export & GIS Reports
MODULE 07 Field Practice & Survey Projects - Chain & Tape Survey, Levelling & Total Station Field Work - GPS Field Survey & DGPS Demonstration - Boundary, Topographic & Contour Surveys - Building Layout, Road Alignment & Site Development Surveys - Survey Data Processing & Digital Map Preparation	

Practical Projects & Industry Capstones

- Residential Plot Survey
- Topographic Survey & Contour Map
- Highway Alignment Survey
- Building Layout & Setting Out
- Land Subdivision Plan
- Digital Terrain Model (DTM)
- Cut & Fill Quantity Estimation
- Civil 3D Surface Model
- GPS-Based Land Survey
- GIS Mapping Project
- Complete Survey Documentation & Drawing Set

■ Industry Certification Authorized certificate verified globally via online portal.	■ 100% Placement Support Resume review, mock interviews, and recruiter connections.	■ Lab Access & Mentorship Dedicated workstation lab hours with expert guidance.
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