

ADVANCED GPS CONTROL NETWORK SURVEY AND QC TRAINING

"Achieving Survey Precision and Reliability Through Advanced GPS Control and Quality Control Techniques."

Schedule

Venue (InHouse)	Fees
At Your Organization Premises	Ask For The Quotation

► **Available delivery methods:** In-House Training

Introduction

With the growing demand for accuracy and efficiency in engineering, mapping, and geospatial projects, Global Positioning System (GPS) technologies have become essential tools for survey professionals. The Advanced GPS Control Network Survey and QC Training is designed to provide a comprehensive understanding of advanced survey control principles, GPS data acquisition methods, and quality control (QC) procedures to ensure precision and reliability in positioning and geodetic applications.

Participants will explore advanced techniques in GPS control network design, data processing, baseline analysis, error mitigation, and post-processing using professional software. Through a blend of theory and hands-on practice, this course equips professionals to plan, execute, and verify high-accuracy control surveys aligned with international geodetic and engineering standards.

Objectives

By the end of this training, participants will be able to:

- Understand the theory and principles of GPS and GNSS-based control networks.
- Design and implement high-precision GPS control networks for engineering projects.
- Apply advanced data collection, processing, and adjustment techniques.
- Identify and correct sources of error and positional uncertainty.
- Conduct rigorous quality control (QC) and accuracy assessments.
- Integrate GPS control data with GIS, CAD, and mapping systems.
- Use modern software tools for data adjustment, validation, and reporting.
- Ensure compliance with national and international survey accuracy standards.

Why Attend

As engineering and infrastructure projects demand higher spatial precision, professionals must be equipped with the technical expertise to manage complex GPS control networks and ensure data integrity. This course provides in-depth technical knowledge and practical tools to improve survey accuracy, minimize errors, and enhance confidence in geospatial datasets — essential skills for modern surveyors and engineers.

Target Audience

This course is ideal for:

- Land and Hydrographic Surveyors
- Geomatics Engineers and Technicians
- Civil Engineers and Infrastructure Planners
- GIS Analysts and Mapping Specialists
- Project Managers overseeing geospatial data collection
- Professionals involved in quality assurance and control of survey data

Individual Benefits

- Strengthen expertise in GPS/GNSS data collection and processing.
- Gain hands-on experience with modern survey equipment and software.
- Learn to design and manage geodetic control networks efficiently.
- Improve accuracy and confidence in positional and mapping results.
- Understand best practices for data validation and error mitigation.
- Enhance career prospects in the fields of surveying, mapping, and engineering.

Organizational Benefits

- Improve survey reliability and minimize costly rework.
- Establish consistent quality assurance standards in field operations.
- Ensure compliance with project and regulatory requirements.
- Enhance team capability in precision survey and geospatial management.
- Support efficient planning, construction, and monitoring of infrastructure projects.
- Strengthen the organization's reputation for technical excellence and data accuracy.

Instructional Methodology

The training adopts a practical, field-oriented approach, combining technical theory with real-world exercises through:

- Expert-led presentations and case-based discussions
- Demonstrations of GPS/GNSS survey equipment
- Field simulations of control network establishment
- Data processing and adjustment workshops
- Error analysis and quality assurance exercises
- Group discussions and interactive problem-solving

Course Outline

- Module 1: Fundamentals of GPS and GNSS Systems
- Module 2: Control Network Concepts and Survey Design Principles
- Module 3: GPS Data Acquisition Techniques (Static, RTK, DGPS)
- Module 4: Network Adjustment and Error Propagation Analysis
- Module 5: Quality Control Procedures and Accuracy Assessment
- Module 6: Post-Processing and Data Integration Using Professional Software
- Module 7: Advanced Error Mitigation Techniques and Case Studies
- Module 8: Geodetic Reference Systems and Coordinate Transformations
- Module 9: Integration of GPS Control Networks with GIS/CAD Systems
- Module 10: Field Project - Establishing and Validating a GPS Control Network

Certification

Participants who successfully complete the program will receive a Certificate in Advanced GPS Control Network Survey and QC, recognizing their proficiency in the planning, execution, analysis, and quality control of GPS-based control networks for engineering and geospatial applications.

Why Choose MAWA Events

- **Global Expertise:** More than 17 years of experience in professional training and consulting.
- **Industry-Leading Faculty:** Courses delivered by seasoned professionals with hands-on experience.
- **Practical Insights:** Learn to turn theory into actionable strategies for real-world business impact.
- **Client-Focused Solutions:** Customized programs designed to achieve your organisation's unique goals.

In-House / Customized Training

Interested in running this course for your team?

Please contact us:

TEL:

+601116373203

EMAIL:

info@mawaevents.net

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