Training Course on Digital Photogrammetric Mapping and Terrain Modelling

Professional Development Training Course Outline

Category	GIS	**Duration**	5 Days
Base Fee	$1,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

Digital photogrammetry is a cutting-edge technology that has revolutionized how we collect and analyze spatial data for terrain modeling and mapping. The Training Course on Digital Photogrammetric Mapping and Terrain Modelling is designed to equip professionals with the skills necessary to use photogrammetric techniques for accurate data collection, terrain modeling, and spatial analysis. This training delves into the principles of photogrammetry, 3D modeling, and geospatial data processing, and focuses on the practical applications of these techniques in various industries such as urban planning, agriculture, environmental monitoring, and infrastructure development.

The course offers an in-depth exploration of digital photogrammetry, from capturing aerial and terrestrial images to processing them for creating precise 3D terrain models. Participants will learn how to use specialized photogrammetric software and tools to extract meaningful spatial data from photographs and other remotely sensed imagery. The course emphasizes the importance of georeferencing, feature extraction, and terrain model generation, which are crucial for high-quality mapping applications.

Programme Curriculum

Training Course on Digital Photogrammetric Mapping and Terrain Modelling

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As the demand for high-precision mapping and terrain models grows, professionals in fields such as environmental sciences, civil engineering, and geospatial analysis can greatly benefit from mastering digital photogrammetric techniques. The course will also cover the integration of photogrammetric data with GIS (Geographic Information Systems) and other geospatial technologies, further enhancing the potential for data analysis and visualization. Through hands-on training and case studies, participants will gain the practical experience needed to apply photogrammetry effectively in their professional projects.

Course Duration

5 Days

Course Objectives

1. Understand the principles and techniques of digital photogrammetry.
2. Learn how to capture and process high-quality aerial and terrestrial images for mapping.
3. Gain practical skills in creating 3D terrain models from photogrammetric data.
4. Develop expertise in georeferencing and feature extraction for accurate mapping.
5. Master the use of photogrammetric software and tools for terrain modeling.
6. Understand the integration of photogrammetric data with GIS platforms.
7. Learn the process of error detection and quality control in terrain modeling.
8. Understand how to apply photogrammetric mapping in urban planning and infrastructure development.
9. Learn to interpret and visualize 3D terrain models for decision-making.
10. Apply photogrammetric techniques to real-world case studies and projects.

Organizational Benefits

1. Improved accuracy in spatial data collection and mapping.
2. Enhanced decision-making through high-quality, precise terrain models.
3. Increased efficiency in mapping and modeling projects using advanced digital tools.
4. Ability to integrate photogrammetric data with GIS and other geospatial systems.
5. Reduced errors in terrain analysis and planning through advanced modeling techniques.
6. Improved project management in infrastructure and urban development projects.
7. Streamlined workflows in environmental monitoring and resource management.
8. Increased ability to visualize and interpret complex spatial data.
9. Enhanced ability to support sustainable development projects with accurate terrain data.
10. Competitive advantage in industries relying on spatial data analysis and modeling.

Target Participants

- Geospatial analysts and GIS specialists.

- Surveyors and land planners.
- Environmental scientists and researchers.
- Civil engineers and construction project managers.
- Urban and regional planners.
- Agriculture professionals using spatial analysis for precision farming.
- Architects and infrastructure developers.
- Remote sensing professionals.
- Researchers in the field of spatial data and modeling.
- Students and professionals interested in learning digital photogrammetry and terrain modeling

Course Outline

Module 1: Introduction to Digital Photogrammetry

1. Overview of photogrammetry and its applications.
2. Types of photogrammetry: Aerial vs. terrestrial.
3. Principles of image capture and stereoscopic vision.
4. Importance of georeferencing in photogrammetric mapping.
5. Case Study: The role of photogrammetry in disaster management and mapping.

Module 2: Data Acquisition and Image Processing

1. Techniques for capturing high-quality photogrammetric images.
2. The role of cameras, drones, and other tools in data acquisition.
3. Image pre-processing: Correction, calibration, and alignment.
4. The use of control points and ground truthing.
5. Case Study: Using UAVs for precise terrain mapping in remote areas.

Module 3: Terrain Modeling Techniques

1. Introduction to terrain models: Types and uses.
2. Creating 3D terrain models from photogrammetric data.
3. Techniques for feature extraction and surface generation.
4. Post-processing terrain data for accuracy.
5. Case Study: Terrain modeling for urban planning and infrastructure development.

Module 4: Georeferencing and Accuracy Control

1. Understanding georeferencing in photogrammetry.
2. Techniques for improving georeferencing accuracy.
3. GPS and control point integration.
4. Quality control and error correction methods in terrain models.
5. Case Study: Georeferencing aerial imagery for accurate land use mapping.

Module 5: Integrating Photogrammetry with GIS

1. The importance of GIS in terrain analysis.
2. How to import photogrammetric data into GIS software.

3. Combining terrain models with satellite imagery and other geospatial data.
4. Spatial analysis using GIS and photogrammetric models.
5. Case Study: GIS and photogrammetry in environmental resource management.

Module 6: Real-World Applications and Future Trends

1. Applications of photogrammetry in urban planning, agriculture, and infrastructure.
2. Using terrain models for environmental impact assessments.
3. Advancements in photogrammetry and its integration with new technologies.
4. Future trends: Automation in photogrammetric mapping.
5. Case Study: Leveraging photogrammetric terrain models for disaster recovery and planning.

Training Methodology

The instructor led trainings are delivered using a blended learning approach and comprises of presentations, guided sessions of practical exercise, web-based tutorials and group work. Our facilitators are seasoned industry experts with years of experience, working as professional and trainers in these fields.

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call *+254769199797*

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Online	$1,000
23 Nov 2026	27 Nov 2026	Physical	$1,500
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$4,500
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$6,000

Ready to enroll or request a customized program? Book online or contact us:

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