CC317 - GIS for Integrated Land Information System (LIS) Course

Course Duration: 10 Days
Training Fee: KSH 80,000 | USD 800
Course Registration: **Register Here>>**

1.0. Introduction

Almost 80% of any development activity takes place on land resource. The information regarding location, condition and type of interest people have over land is needed for proper planning, sound policy formulation and timely and equitable services delivery to citizens. Land Information is prime requisite for making decisions related to land investment, development and management. Often, information reduces uncertainty by helping to identify and analyze problems. Strategies to overcome them may then be prepared and implemented. The value of the information and the effectiveness of the decision-making process are directly related to the quality of the information and the manner in which it is made available. Land records are very important because these forms the basis for assignment and settlement of land titles, these must stand against legal scrutiny. It helps to create more reliable and all-embracing tool for decision making about land.

1.1. Course Overview

The cadastre is an inventory of land object. It provides a wide inventory of local, regional, state, and national land objects such as parcels, properties, natural resources, environmental and legal aspects. The cadastre is normally up-to-date in which land information is systematically identified. The cadastre shows present conditions of lands. Cadastral systems must serve a multi-purpose use and thereby meet the challenge of a modern GIS and IT environment and of course Land Reform efforts. The cadastre is seen as the basic infrastructure for providing economic, social and environmental benefits. This cadastral infrastructure will permeate through the land administration and land management systems. This course will focus on the principles of Land administration; concepts and functions of land administration systems; Land use; Land valuation; Land tenure; Land rights; Land information systems etc.

1.2. Course Content/Outline

i. **Land Information System Concepts:** The concepts of land tenure, land rights, land law, the continuum of land rights, security of tenure; systems of the land registration and cadastre and land administration systems.

ii. **Responsible Land Information System:** The Cadastre; Land registration systems in the context of land policy and land management; Relationship between land policy and land administration functions – tenure, land use, land value, and land development.

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iii. **Role of GIS in Land Information System:** Mapping the suitable locations of planned economic or development activities; Identifying the trend in the land use and valuation; Analyzing and visualizing spatial changing patterns and trends; Modelling spatial change of development activities.

iv. **Land Information Systems and Models:** Overview of systems for acquiring, processing, storing, and distributing information about land; Concepts and technologies that support secure land tenure, land valuation, land use planning and land development; developing LIS models in GIS.

v. **Development of a Land Information System:** The LIS-GIS Models; LIS data capture e.g. scanning and georeferencing; LIS administration; LIS users; LIS hardware and security; LIS data sharing protocols and workflows; Case study of LIS for Buruburu estate in Nairobi.

vi. **Cadastral Data Acquisition Technologies:** Cadastral maps scanning, digitization; Geo-informatics tools for designing fit-for-purpose land administration systems; 3D Cadastres; documentation and management of land rights.

vii. **Cadastral Data Dissemination Methods:** Overview of cadastral data dissemination; Implementation know-how in land informatics and 3D Cadastre using innovative IT tools.

viii. **Organizing Land Information:** Public land administration agencies and land governance; how organizational change can take place in order to adapt to new developments; innovative services in land administration.

1.3. Expected Learning Outcomes

On completion of this course, the participants are expected to:

i. Apply LA and LIS concepts and broadly explain the social, economic and environmental importance of land and land information systems in societies;

ii. Describe a land administration process and its subsystems as well as get acquainted with the components of the cadastre/LIS;

iii. Classify technical and non-technical options for designing and managing land information infrastructures;

iv. Design and develop land administration and information systems for specific country contexts;

v. Analyze local and overseas approaches to land administration in both developed and developing country contexts for sustainable development.

1.4. Training Tools (Hardware and Software)

1. Handheld GPS; Smartphones;
2. ArcGIS & Q-GIS; GML Language.
3. PostgreSQL & PostGIS; Geonode; Geoserver;

1.5. Training Style and Approach

1. On-site instructor-led training and On-line training;
2. Use of PowerPoint Slides and case Study Videos;
3. Data Collection using smartphones, GPS etc.

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