

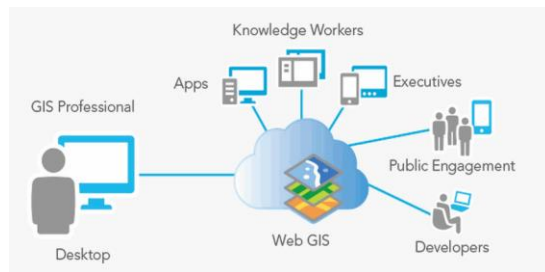
## AC202 - GIS Web Mapping and Application Development Course

Course Duration: 7 Days

Training Fee: KSH 56,000 | USD 560

Course Registration: [Register Here>>](#)

### 1.0. Introduction



Web maps are interactive mapping applications that dwell on the web & support visualization, distribution, exploration, manipulation, and collection of data. Combination of the web and GIS has opened up the potential of GIS, and availed online maps and geospatial intelligence to billions of users. Both non-GIS users and GIS experts can do more now, than ever to share maps over the internet. Web maps

enable users to easily deliver up to date information, generate maps automatically from databases, as well as display information in almost real-time.

They don't need to be printed, mastered and distributed. Web GIS has immense applicability to e-government, e-business, e-science, and all aspects of daily life. Government employees can utilize Web GIS to improve public services delivery and boost collaboration across agencies. Regardless of the sector, businesses can use Web GIS to enhance their existing business models and create new ones. Researchers can find new solutions to meet the challenges of the new frontiers. Web GIS has great practical value to our world today and into the future.

### 1.1. Course Overview

This course provides an in-depth understanding of Web GIS and Web mapping concepts, starting from the basic concepts to the more advanced ones, therefore providing learners with valuable skills which will place them a step ahead in this digital age.

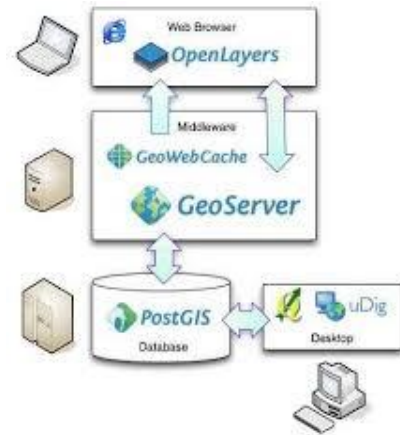
### 1.2. Course Objectives

- To understand the importance of web services and get started on making web maps with various standards
- To learn how to put layers together with a web mapping API
- To learn how to publish maps online using both open source and proprietary software
- To learn how to draw and query maps on the server using Web Map Service

### 1.3. Course Content/Outline

- Introduction to web mapping:** Introduction to IIS Server; Web GIS, Web Mapping.
- Introduction to Web Technologies:** HTML, JavaScript, CSS, KML, GeoJSON, Tiled Web maps
- Introduction to GeoServer, GIS Online:** Google fusion tables, OpenStreetMap and GIS Cloud with their Admin Panel and User Interface.

- iv. **Designing web maps using various software:** Customizing web maps using HTML, Styling and symbolization of a web map; Elements of a web map; animated and real-time web maps; static web maps; collaborative web maps
- v. **Processing spatial data in web mapping platforms:** Understanding data formats for use in web mapping; processing spatial data with various software; geo-processing vector and raster data with QGIS and OGR/GDAL
- vi. **Putting layers together with a web mapping API:** Introduction to web mapping APIs; Programming patterns with web mapping APIs; Looking into OpenLayers examples
- vii. **Google maps and JavaScript APIs:** Introduction to google maps; Creating Custom Web maps without programming; Orientation to Google maps API; Building Google maps/ customization
- viii. **Hosting Map & Geodata Services:** Cloud GIS map creation and hosting;
- ix. **Web based data editing:** Querying web map and Data Extraction;
- x. **Publishing maps using GeoServer:** Introduction to GeoServer; Installing and configuration; The GeoServer Interface; Publishing maps in GeoServer; Data querying in GeoServer



#### 1.4. Case Study:

Developing an Enterprise GIS web mapping application for Nakuru County.

#### 1.5. Expected Outcomes

At the end of this learning module, learners should have:

- Understand web mapping concepts, including Cloud GIS, ArcGIS Online, OpenStreetMaps, Geoserver, Google Maps APIs,
- Be proficient in using different web technologies including JavaScript, CSS, and HTML
- Be proficient in creating and Publishing Web Maps using QGIS, GeoServer

#### 1.6. Training Material (Hardware and Software)

- A laptop/PC
- QGIS/ GIS Online

#### 1.7. Who should attend?

- Both non-GIS users as well as experts
- Government Administrators
- Business persons
- Parastatals e.g. UNEP, WFP
- Geographers
- IT experts
- Cartographers
- Surveyors and Planners
- Software Engineers