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GEOINFORMATION TRAINING COURSES OFFERED AT ORBITAL AFRICA - 2020

	GEOINFORMATION STARTER COURSES		
ID	**COURSE**	**COURSE DESCRIPTION**	**COST** (inclusive of 16% VAT)
101	Introduction to GIS and Mapping (4 Days)	GIS Definitions; Objectives; Components; and Applications of GIS. Nature of GIS Data; Data Management; Viewing maps; zooming and panning; fixed and zoomable map scale; Static maps vs. Dynamic/online maps; GIS analysis; Spatial Data Infrastructure (SDI).	**Kshs. 30,160** **US$. 310**
102	The Fundamentals of GIS (4 Days)	Exploring geographic data; Coordinate systems and map projections; Geographic & UTM coordinates; Datums; Querying GIS data; Spatial adjustment; Editing features; Layer display properties; Symbolizing Qualitative & Quantitative Data.	**Kshs. 30,160** **US$. 310**
103	Working with MapInfo Professional (5 Days)	Introduction to MapInfo; The basics of MapInfo; Using workspaces; Understanding data in MapInfo; Map objects; working with layers in Layer Control; Cosmetic layer; Thematic layer; Displaying data in Map window; Adding and updating a table; dBase data formats; Drawing and editing objects; Converting polyline to region; Splitting polylines at nodes.	**Kshs. 37,700** **US$. 380**
104	Building Geospatial Databases (4 Days)	Exploring the geodatabase; Creating and loading data; Managing raster data; Maintaining data integrity using subtypes; Maintaining attribute integrity; Relating data using relationship classes; Adding attachments; Designing geodatabase topologies; Sharing a geodatabase; Designing a geodatabase; Project: Building a geodatabase.	**Kshs. 30,160** **US$. 310**
105	Remote Sensing and Photogrammetry (5 Days)	Principles of Remote Sensing and Photogrammetry; Key concepts; EM spectrum; Aerial Photography and Photogrammetry; Sensors and Platforms; Aerial photo vs. a satellite image; imagery bands; stereo images; aerial photos; resolution of images/photos; Unmanned Aerial Vehicles (UAV); Satellite image analysis; Remote Sensing applications: Agriculture, Geology, Hydrology, Urban Planning & Land cover Mapping.	**Kshs. 37,700** **US$. 380**
106	Mobile Mapping using GPS (3 Days)	Introduction to SuperPad software; tracks and waypoints; Checking-in and Checking-out data; Creating a Project; Creating layers (point, line and polygon); Data collection and editing; Adding attributes; Importing Data from GPS to PC; Downloading the data; Data manipulation and Analysis; Creating maps from the collected data and adding basemaps.	**Kshs. 22,620** **US$. 230**
107	Mobile Map Apps Development (5 Days)	Introduction; Getting started with Android technology; Data collection using GPS; Creating a mobile mapping data collection application; testing the application; deploying the mobile mapping application; Linking the data collected with a web server; editing the collected data.	**Kshs. 37,700** **US$. 380**
108	Introduction to ILWIS (4 Days)	ILWIS system overview; Main concepts of ILWIS; Map layers, collections and Data structures; Display system, ILWIS Modules; Spatial data input; ILWIS modeling tools; Database development; georeferencing; Decision strategy analysis; Spatial data management; Attribute data handling.	**Kshs. 30,160** **US$. 310**

GEOINFORMATION ADVANCED COURSES		
201	**Advanced Satellite Image Processing** (5 Days)	Image restoration; Fourier analysis; Classification of remotely sensed imagery; RADAR imaging and analysis; Vegetation indices; Time series/change analysis; Anisotropic cost analysis; Surface interpolation; TIN and surface generation; Geostatistics.
		Kshs. 37,700 **US$. 380**
202	**Introduction to 3D Mapping** (5 Days)	Getting Started with SketchUp; Modeling in SketchUp; Model extrusions in 3D GIS Analyst and SketchUp; Viewing Your Model in Different Ways; Sharing your models; Working with Google Earth Pro and the 3D Warehouse; Printing Your Work; Exporting Images and Animations; Exporting to CAD, Illustration, and Other Modeling Software; Editing KML file with Notepad ++; Creating Presentations.
		Kshs. 37,700 **US$. 380**
203	**Introduction to Web Mapping** (5 Days)	Introduction to Programming in HTML and KML; Introduction to IIS Server; Introduction to web mapping; Getting Started with Server GIS; Online GIS, Customizing web maps using HTML, Styling a web map; Google maps and Javascript APIs; Hosting Map & Geodata Services; Cloud GIS map creation and hosting; Querying web map and Data Extraction; Google Maps APIs; Working with Google fusion tables.
		Kshs. 37,700 **US$. 380**
204	**Introduction to GIS Programming using Python** (5 Days)	What is Python? Introduction to ArcPy; Debugging your scripts; Using Describe Objects; Automating Scripts with Python Lists; Creating and updating data with Cursor objects; Running your scripts in ArcToolbox; Handling Python and ArcPy Extension; Creating and updating Geometry Objects; Manipulating data schema and working with subsets of Data; Automating Map Production with ArcPy Mapping Module.
		Kshs. 37,700 **US$. 380**
205	**Interactive Mapping with Adobe Flash** (3 Days)	Scalable Vector Maps (SVG); Editing and Modifying SVG file with Adobe catalyst and Illustrator; converting polygons into buttons and creating hyperlinks/interactivity; creating animations; Exporting to SWF file; Uploading the maps into a website/cloud.
		Kshs. 22,620 **US$. 230**
206	**Advanced GIS Analysis and Workflows** (5 Days)	GIS analysis basics; Proximity analysis (buffering, near and point distance, Thiessen polygons); Overlay analysis (erase, intersect, spatial join, update, union, symmetrical difference); Extract (clip, select, split, table select) Geoprocessing in GIS; Analysis tools and toolboxes; Designing a spatial model; Using model builder; Tree cutting priority analysis project; exploring spatial statistics; site suitability analysis.
		Kshs. 37,700 **US$. 380**
207	**Working with GIS Geometric Networks** (5 Days)	Introduction to network analyst; creating a network dataset; Adding layers to network dataset; Road network analysis (shortest path); Origin-Destination computations (O-D matrix); creating network layers; service area calculations; location of the closest facility; Adding locations to a network; running the network; network optimization.
		Kshs. 37,700 **US$. 380**
208	**Advanced Geostatistical Analysis** (5 Days)	Analysing patterns; Mapping clusters; Measuring geographic distributions; Modelling spatial relationships; Average nearest neighbor analysis; Cluster/outlier analysis with rendering; Collect events with rendering; Hotspot analysis; Z-score rendering; Ordinary least squares; Generate spatial weights matrix; Spatial auto-correlation
		Kshs. 37,700 **US$. 380**
209	**PostGIS Database Administration** (5 Days)	Introduction to PostGIS and Postgres; OpenGeo suite dashboard; creating connections with QGIS; loading data using PostGIS loader; Building web maps; Web cartography; Building complete web applications; Working with spatial data; Spatial Processing and
		Kshs. 37,700 **US$. 380**

		Analysis; Building web apps with Open layers; PostGIS System administration; Encryption of PostGIS database.	
210	Getting Started with the GIS Server (GeoServer I) (7 Days)	Introduction; Installation of GIS server bundle; Getting started; Web Administration Interface Quickstart; Publishing a shapefile; Publishing a PostGIS table; Styling a map; GeoServer data directory; Web administration interface; working with vector and raster data; Working with Spatial databases.	**Kshs. 52,780** **US$. 530**
211	Advanced GIS Server Administration (GeoServer II) (7 Days)	Working with application schemas; Adding administrative rights; Working with cascaded services; Filtering in GeoServer; Styling; Services; REST configuration; Advanced GeoServer configuration; Security; Running in a production environment; Caching with GeoWebCache; GeoExplorer; connecting with Google Earth.	**Kshs. 52,780** **US$. 530**
212	Engineering Design using AutoCAD (5 Days)	Introduction; Collecting and organizing data; Relationship between project and drawing; Loading data; defining data to databases; Compiling data to build surfaces; Accessing commands; Setting preferences; Working with projects; Working with drawings; Viewing drawings; Organizing drawings with layers; Working with COGO points; Working with drawing and editing tools; Working with surfaces; Creating cadastral information; Listing and annotating plans; AutoCAD map and land.	**Kshs. 37,700** **US$. 380**
213	Surveying with a Total Station and RTK GPS (5 Days)	Names and functions of TS and GPS parts; initial setup; angle mode; distance mode; coordinate mode; offset mode; surveying; staking out; resection method; file management; importing and exporting data; area (projection and roadway); adjusting index error; adjustment and corrections; base-rover config; COGO; Post-processing.	**Kshs. 37,700** **US$. 380**
214	Working With LiDAR Analyst (5 Days)	Installing LiDAR analyst for GIS; Prerequisites; Activating LiDAR analysts; Introduction to LiDAR Analysts; Using LiDAR in GIS; checking data quality; Loading LAS files to GIS – LAS to multipoint tool; Loading ASCII (X,Y,Z) files to GIS; Apply LYR file symbology; Create grid profiles; Subtract grids; Cut and Fill; Clip grids; Convert graphics to shapes.	**Kshs. 37,700** **US$. 380**
215	Working with Patch Analyst (5 Days)	Introduction to Patch analyst; Installing Patch analyst for GIS; Spatial metrics; Patch size and edge density; Patch richness; Patch Shape; Patch diversity and Evenness; Patch evenness; Mean Patch Fractal Dimension; Patch isolation; Fragmentation; Spatial distribution/ Interspersion; Nearest neighbour/ Proximity; Core area metrics; Mean patch size; Contagion; Shannon Diversity/Evenness Index; Mean shape Index; Patch size standard deviation.	**Kshs. 37,700** **US$. 380**
216	Programming with Google Maps APIs (5 Days)	Introduction to APIs; what is a Google map? Google maps basics, Map overlays; maps events; Maps controls; Maps types; Maps reference; Example APIs; modifying the APIs using Notepad ++; Google APIs commands; Google APIs for the Street maps.	**Kshs. 37,700** **US$. 380**
217	Mapping with Google Earth KML (4 Days)	Introduction to KML; Shapefile to KML conversions; Working with shapes: points, polylines, polygons; Creating 3D models; Shape colours; Georeferencing the models on Google Earth; Polygon extrusion.	**Kshs. 30,160** **US$. 310**

	GEOINFORMATION CERTIFICATE COURSES		
ID	**COURSE**	**COURSE DESCRIPTION**	**COST**
301	GIS Application in Urban Planning (2 Weeks)	Introduction; Exploring Community Viz and Scenario 360; Population growth modelling; Land use demand and supply calculations; creation of suitability layers; location-allocation modelling; creation of future scenarios based on 4 epochs; spatio-temporal modelling; creation of simulations and animations; sensitivity analysis and calibration of the models; working with Scenario 3D; Applications; Introduction to Change Analyst, Statistical analysis using SPSS; Use of GIS in transport planning.	**Kshs. 75,000** **US$. 750**
302	GIS Application in Geological Mapping (2 Weeks)	Introduction to Target for GIS I and II; Loading target toolbars; Creating an MXD and loading data; Setting projection information; Creating gridded data and contours; Geological mapping – 2D and 3D mapping; Creating composite databases; Processing data in GIS; Visualizing and making available data – maps and map services; Spatial Data Infrastructure (SDI); Analysing Geochemical Data in GIS; Using QA/QC tools; Using Drillhole management tools.	**Kshs. 75,000** **US$. 750**
303	GIS Application in Environmental Management (2 Weeks)	Introduction; Monitoring systems; The role of GIS in environmental monitoring; Environmental monitoring and modelling; GIS as analysis tool for monitoring data; Examples of monitoring systems; Local area monitoring; Feedback loops; Conducting an EIA with ILWIS; The Eagle System; The Sub-Systems; Field data collection using GPS; Surface interpolation; Temporal analysis; Three-Dimensional analysis.	**Kshs. 75,000** **US$. 750**
304	GIS Application in Water Resource Management (2 Weeks)	Introduction; Exploring Geodatabase and viewing layers; Exploring the customer database; Creating a GIS SQL queries; Exporting records to Microsoft Excel; Creating a report; updating the database: Adding a new customer; Plot subdivision; Creating a new plot; Creating a new pipe; Formulating and implementing GIS queries: Creating a join; Identifying unmarked connections; Creating a Geodatabase; Geometric network and analysis; Creating the Network features; Preparing the network for tracing; tracing downstream and upstream; Creating a map.	**Kshs. 75,000** **US$. 750**
305	GIS Application in Natural Resource Management (2 Weeks)	Introduction; Resource assessment; Landuse and Land cover mapping; Soil mapping; Change detection using ILWIS; Suitability analysis; Scenario study; Environmental Impact assessment; Forest management; Multi-source forest inventory; Resource mapping using GIS and RS; Watershed management; GIS data to combat desertification; Biodiversity management; Soil erosion modelling; Decision Support Systems; Spatial Multi-Criteria Evaluation (SMCE).	**Kshs. 75,000** **US$. 750**
306	GIS Application in Land Administration (2 Weeks)	Introduction and principles of Land administration; Concepts and functions of land administration systems; Land use; Land tenure; Land rights; Cadastral systems; GIS modelling; LIS; Modelling concepts; Cadastral models; Spatio-temporal models; Data handling technologies; Person, land rights and objects; Geodetic systems; projection systems; Georeferencing and transformation; GPS; Mobile GIS; 2D digitizing and scanning; cadastral maps; Land policy; Land taxation; Cadastral databases.	**Kshs. 75,000** **US$. 750**