Indepth Research Services

Courses Brochure
(May - August Course Series)

Training & Professional Consultancy
[GIS | Remote Sensing | Statistical Analysis | ICT Services]
1: MAY TO JULY 2011 COURSE SERIES
i. Methodology and Software for Planning and Execution of Surveys, Data Processing and Analysis - An Introductory Course
ii. Use of GIS and Remote Sensing in Disaster Risk Management (3rd Edition)
iii. Web GIS Course (Web Programming and Web GIS Development)

2: ADMINISTRATIVE ISSUES
i. Financial Matters
ii. Applications
iii. Currency Converter Link
iv. Cancellation Fee
v. Insurance Recommendations
vi. Indepth Research Services Study Environment
vii. More Information
WHY THIS COURSE?

Current practices in resource mobilization within public, private sectors and Non Governmental Organizations (NGOs) have put a lot of emphasis on the need to peg planning and allocation of resources to evidence-based research. This has led to increased funding to research initiatives that include a variety of baseline surveys, Socio-Economic Surveys, Demographic and Health Surveys, Nutrition Surveys, Food Security Surveys, Program Evaluation Surveys, Employees, customers and vendor satisfaction surveys, and opinion polls among others.

Although there has been an attempt to make the findings as representative as possible, the level of skills in those in charge of conducting these surveys has to a great extent been inadequate and this has compromised the quality and integrity of the data collected and consequently, the reports derived from such studies.

In other instances, there have been obvious technological gaps in the types of tools used; making the process to be both tedious and unduly delayed, such that the release of results is surpassed by need.

This is therefore a five days hands-on course that is tailored to address these challenges to a considerable extent. It is also meant to improve the way organizations store their data and enable data sharing without putting the confidentiality of respondents and data providers into jeopardy.

It is envisioned that upon completion, the participants will be empowered with the necessary skills to produce accurate and cost effective data and reports.

FOR WHOM IS THE COURSE RELEVANT?

This course is designed for participants with basic statistics knowledge, who desire to acquire hands-on skills in planning and executing surveys, data processing and analysis of survey data. It endeavours to impact participants with adequate modern skills and technologies in conducting surveys and producing accurate and timely results.

The course is intended for professional practicing as Statisticians, Economists, Researchers, Nutritionists, Financial Analysts, Monitoring and Evaluation Specialists, Logisticians, planners, Data Analysts and Data Managers, Information Systems Managers, GIS and Remote Sensing Practitioners and other disciplines in Social and Physical Sciences. Participants who want to broaden their knowledge in conducting surveys may also apply.
COURSE OBJECTIVES

At the end of this course participants should be able to:-

• Understand and appropriately use statistical terms and concepts
• Plan and oversee execution of a small surveys
• Design universally acceptable questionnaires
• Design computer aided data capture screens using Ms Excel
• Create a data dictionary and data capture screens using CPRO
• Convert data into various formats using appropriate software
• Perform complex data manipulation using Ms Excel, including use of statistical functions embedded
• Perform basic data analysis tasks with SPSS and STATA
• Write short VBA programs to automate regular tasks
• Perform simple to complex statistical analysis using SPSS and STATA
• Correctly identify appropriate statistical test for basic analysis and perform them using SPSS and STATA
• Use Open source statistical software (PSPP)
• Use GPS receivers to collect coordinates for location based data
• Use Google forms and display data on Google maps
• Use GIS software to plot and display data on basic maps
COURSE OUTLINE

Module One: Basic Concepts

Review of basic statistical terms and concepts
• Descriptive Statistics
• Measure of Central tendency
• Measures of Dispersion
• Frequency Distribution
• Qualitative and Quantitative Research

Sources of Data for Social Statistics
• Census
• Surveys
• Vital Statistics records

Module Two: Survey Planning, Sampling and Execution

Planning and Execution of Surveys
• Research Questions and Questionnaire Design
• Data collection methods
• Implementation of field work
• Tabulation and analysis plan
• Advanced Excel (Statistical Functions)
• Introduction to GPS
• Introduction to Google Applications: Maps and Forms

Sampling Strategies and Sampling Methodologies
• Defining Measurement Objectives
• Sample size determination
• Sample size calculation
• Selecting the Sample
• Construction and Use of Sample Weights
• Power Analysis and Sample Size
• Estimation of Sampling Errors for Survey Data
• Advanced Excel (Data Analysis Toolkit)

Module Three: Data Processing and Quality Control

Data Management
• Planning the data needs of the study
• Main types of data
• Data collection
• Data entry
• Data validation and checking
• Data manipulation
• Types of storage
• File backup
• Data Format Information
• Data file documentation; Two places for Metadata
• Data Archiving
• Important Data Management Tools
• Microsoft Windows File Management
• Intermediate Excel (Worksheet Functions)
• Introduction to Software options for different types of survey data processing (CSPRO)
• Introduction to GIS and Remote Sensing: Technique and Software
• Introduction to Stat Transfer

Module Four: Introduction to Statistical Software
• SPSS
• STATA
• EPI Info
• Open Source Statistical Analysis Software (PSPP)

Module Five: Statistical Hypothesis Test, and Methods

Statistical Hypotheses Testing
• Hypothesis Tests
• Decision Errors
• Decision Rules
• One-Tailed and Two-Tailed Tests
• Software options for different steps of Hypothesis Tests (SPSS)

Statistical Methods and Tests (Separate tests)
• T-Test
• Paired T-test
• Chi-Square Test
• ANOVA
• ANCOVA
• MANOVA
• Repeated Measures ANOVA
• Factor Analysis
• Cluster Analysis
• Linear Regression
• Correlation
• Mann-Whitney test
• Kruskal-Wallis test
• Wilcoxon Signed-Ranks test
• McNemar’s Test
• Friedman’s Test

Module Six: Introduction to Advanced Statistical Analysis
• SPSS: Building Syntax Files
• STATA: Building Do Files
• Advanced Excel (Advanced Statistical Functions, Macros and VBA Projects)
USE OF GIS AND REMOTE SENSING IN DISASTER RISK MANAGEMENT
3RD EDITION

WHY THIS COURSE?

The main purpose of the course is to enhance the capabilities of executive managers and technical staff involved in disaster risk management by providing them with understanding on the use of spatial information in disaster risk management.

Participants acquire hands-on skills in application of geographical information system (GIS) and Remote Sensing (RS) in disaster risk management interventions, and learn to work with, aerial photographs, satellite images and digital maps that are the key to a better understanding of hazard, vulnerability and risk. This leads to better informed decision making, whether it is at the community, provincial, national, NGO, private sector enterprise or public sector institutions.

OBJECTIVES

By completing this course, participants will be able to:
• Understand the spatial data requirements in disaster risk management
• Application of GIS and RS as a tool for hazard, vulnerability and risk (HVR) assessment
• Integration of HVR Assessment results in urban planning, infrastructure planning, and locating of critical facilities and human settlement
• Use risk information in planning disaster reduction intervention through spatial multi-criteria analysis
• Assess spatial data availability and understand the importance of spatial data infrastructure (SDI), for data sharing by organizations involved in disaster risk management
• Apply GIS and RS for designing implementations of large scale early warning systems
• Use participatory GIS (PGIS) at community level
• Application of remote sensing data and image processing techniques to monitor hazardous events and assess damage
• Damage assessments in order to generate information for recovery planning
• Evaluate the spatial data requirements in disaster risk management
• Infrastructure (SDI), for data sharing by organizations involved in disaster risk management
• Design and implement their own GIS projects that integrate remote sensing data, GPS-based field information, and HVR models and analysis in a proper geospatial and cartographic framework

FOR WHOM IS THE COURSE RELEVANT

The course is targeted at professionals who require knowledge and skills on the use of GIS and RS in their organization in the field of disaster management. Participants are welcome from a broad range of organizations including physical planning, institutions, professionals and private GIS and RS related firms.

| Duration:  | 5 days |
| Dates:    | 27th June – 1st July 2011 |
| Venue:    | Kasarani, Sportsview Hotel, Nairobi |
| Course Fees: | USD 950, Exclusive of VAT |

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COURSE CURRICULUM

Module 1: Hazard, vulnerability and risk assessment with GIS and RS
- Introduction to disaster risk assessment
- Basic GIS and RS concepts in the context of disaster management
- Hazard, vulnerability and risk assessments with geodata (focusing on physical and socio-economic vulnerability, and multi-hazard risk assessment)
- Participatory GIS for community-based disaster risk management and use of Google Geospatial tools.
- GPS-based mobile GIS for hazard and vulnerability field data collection.

Module 2: Application of risk information and spatial data infrastructure
- GIS project design and setup, spatial reference systems & data integration
- Spatial data availability, and identification of spatial base data providers (e.g. DEMs, topodata, population data, etc.), thematic spatial data providers (e.g. flood data, earthquake data etc.) and spatial data users (e.g. NGO’s, government organizations, municipalities, etc.)
- Spatial data infrastructure (data sharing, restrictions, metadata, clearing houses)
- Visit to a satellite data receiving and processing station.

Module 3: Early warning systems and disaster monitoring
- Early warning systems for major hazards
- Use of GIS in disaster preparedness planning
- Disaster monitoring using remote sensing techniques: image processing techniques for change detection

Module 4: Damage assessment and data dissemination
- Damage assessment for recovery planning
- Risk mapping and database generation
- Introduction to web GIS and data visualization
- Multi-sector loss estimation
III. Web GIS course (Web Programming and Web GIS Development)

INTRODUCTION

IRES is now offering a course on Web Mapping and Web GIS. The main aim of this course is to capaci-
tate participants in developing information material that are accessible at no or low cost. This includes
use of Open Source solutions, both for development and management use and for GIS work to
improve accessibility for people, organizations and countries with lesser means of funding GIS imple-
mentation and use.

This course intends to give participants an overview on designing and publication of maps and
performing geographic analysis through the internet. The course modules describe the most common
techniques and standards for distribution of geographical data via the Internet. The practicum con-
centrates on methods for creating map services on the Internet by use of web GIS software. The course
contains a major individual project where the students set up their own map service on the Internet.

The course covers:
• Web development essentials
• Design of web maps
• Web scripting
• Database connections
• Open Source Internet mapping software
• Internet mapping software of different vendors
• Spatial Data Infrastructure and Interoperability

FOR WHOM IS THE COURSE RELEVANT?

This is a general course. It is intended for Individuals in the professions of Data Analysis and Data Man-
agement, Information Systems Management, GIS and Remote Sensing Practitioners and other disci-
plines in Social and Physical Sciences who are or wish to publish GIS information on the web (maps and
others). Participants who want to broaden their knowledge in Web GIS applications may also apply.

COURSE REQUIREMENTS

The course is designed for participants with a reasonable reading and understanding skills in English
and a basic working knowledge of web technologies and GIS systems (e.g. know about databases,
vector and raster data, maps, have worked with a GIS or CAD system).
COURSE CONTENTS

Module 1: Web GIS Essentials
• Web sites for spatial data dissemination
• Introduction to Web Technology for GIS and mapping
• Web site workshop: exploring the possibilities
• HTML basics: setting up a website

Module 2: Web Mapping Architecture
• Web Mapping: client-side solutions
• Client-server architecture
• Web forms
• Server Side scripting (php)
• Database connections (ODBC)

Module 3: Web Services
• Interoperability, Web Services & Open Geospatial Consortium
• XML and GML
• Using interoperable clients

Module 4: SDI and WMS Server
• SDI: Spatial Data Infrastructures
• SDI Initiatives in Africa
• Setting up a WMS server (UMN Mapserver)

Module 5: Project
• Building your own geodata website
D: FINANCIAL MATTERS
The costs indicated for each course DO NOT include VAT and will cover registration fees, tuition fee, course materials (DVD/CD, handouts), break refreshments and study visit, during the training period of 5 days. Travel and accommodation is to be arranged and paid directly by the participants. Organizations that send five participants to this course are entitled to send a sixth person without paying the course fee.

IRES has established this arrangement in recognition of the special needs of sponsoring organizations that wish to send large groups to the course.

E: APPLICATIONS
The application form is available on the link: (http://www.indepthresearch.org/downloads/Request_Form.pdf)
The application form should be submitted 30 days before the commencement date of the course being applied for by mail or email (see address details below).

Pre-course information will be provided once registration for the course is confirmed. The course brochure is also available at the link: http://www.indepthresearch.org/downloads/Course_Brochure.pdf

F: CURRENCY CONVERTER LINK
Follow the link to get up to date currency conversion:
http://www.oanda.com/currency/ converter/

G: CANCELLATION FEE
Payment for the all courses includes a registration fee, which is non-refundable, and equals 20% of the total sum of the course fee.
• 20 days or more before date of course commencement - 80%
• 10-20 days before date of course commencement - 50%
• No refunds are possible 10 days or less prior to course commencement
H: INSURANCE RECOMMENDATIONS

Travel Insurance
Even though Kenya is a safe country enjoying a very low crime rate; it is highly advisable to purchase a TRAVEL INSURANCE POLICY prior to your arrival at our programme at the Indepth Training centre. As we have a very high amount of participants, we are limited in any assistance through our insurance in those rare cases of loss or theft. Therefore we recommend that your policy covers the loss or damage of any valuables you may wish to bring with you such as a laptop computer, camera, glasses, jewellery etc.
IRES DO NOT compensate participants for loss or damage of private property.

Before Departure
Prior to travelling to any domestic or international destination, it is always advisable to consider investing in a travel insurance policy to ensure any loss or theft of your personal possessions on your way to your destination.

Baggage & Money Cover
Insurance for personal possessions is vital when travelling, and while most insurance policies will compensate very well for lost or delayed baggage, they may be slightly more limiting when claiming for personal possessions or cash. Most travel insurance policies do not provide “new for old” as is standard with most household insurance, rather, they cover the value of the item at the time it is lost or stolen.

Credit Cards and Cash
Your insurance policy should cover the loss or theft of cash up to a certain value. It is recommended that you travel with an international credit card with you and carry only a small amount of cash at all times to minimise your risk. Credit cards may be covered under your household contents insurance, and some have their own insurance policies associated with them. These insurance policies may be slightly limited when it comes to travel so be sure to check that you have adequate insurance and take out extra if you need to.

Contents Insurance
Most travel insurance policies are fairly restrictive when it comes to the upper limit that you can claim for a single item. It is recommended that you do not take any extremely valuable items with you on a trip abroad. If you must take valuables then most household contents insurance policies will have a clause for items briefly taken out of the country. Taking out extra cover on your household contents insurance is a good plan for valuable items such as a mobile phone, digital cameras, laptop computers and jewellery. This kind of insurance may also provide “new for old” cover on your valuable items. Remember - only take valuable items if absolutely necessary.

Travel Documents
Documents vital for travel such as your passport or tickets are very often covered by travel insurance policies but loss of these documents may cause severe delays to your trip or return home so be sure to take special care of them. If you lose your passport while in Kenya, report it immediately to the IRES Officials. You will be required to apply for a replacement passport - remember to take some identification with you as you will have to prove your identity before you will be issued with a replacement. It is recommended to make photocopies of your passport before your trip. These copies are to be kept separately and not in the same hand luggage as your passport.
I: INDEPTH RESEARCH SERVICES STUDY ENVIRONMENT

IRES is committed to attaining excellence through diversity. Diversity infuses richness and cultivates strength within our international courses, focusing on respect for all human differences, including age, cultural, ethnic, racial, linguistic, gender, socioeconomic, educational, religious, sexual orientation, and ability. Our participants are valued for bringing a balance into perspective with their skills and strengths to our courses.

Understanding and embracing the diversity of our participants from different origins, ideologies and cultures brings an important element to the programs. Indepth Research Services is blessed with an experienced workforce equipped with cultural skills, helping to maintain excellence through diversity, providing an environment free from discrimination and harassment.

“We are all something, but none of us are everything.” Blaise Pascal

J: MORE INFORMATION

More information about the courses can be found on IRES’s website:
http://www.indepthresearch.org

or contact
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“Excellence is an art won by training and habituation. We do not act rightly because we have virtue or excellence, but we rather have those because we have acted rightly. We are what we repeatedly do. Excellence, then, is not an act but a habit.” Aristotle