MAGNA SKILLS (PTY) LTD

Corporate Training Courses
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Data Analysis using R Course Details

Department: NGO Management & Policy Development

Presented by Magna Skills Development Institute

Registration Link

Date Created: 25-Jul-2025

Training Coordinator: Denis Wunganayi

Course Summary

This hands-on course, custom-designed by Magna Skills, equips professionals with the practical skills to perform data analysis using R—one of the most powerful open-source programming languages for statistical computing. Participants will learn to import, clean, manipulate, visualize, and analyze data, turning raw data into actionable insights. The course bridges the gap between theory and practice, focusing on real-world applications in research, policy-making, monitoring & evaluation, and reporting.

Whether you're in government, NGO, academia, or private sector, this course will enable you to confidently handle data-driven projects using R.

Course Objectives

1. By the end of this course, participants will be able to:
    1. Understand the fundamentals of R programming for data analysis.
    2. Import, clean, and manipulate datasets efficiently using R packages like *dplyr* and *tidyr*.
    3. Perform exploratory data analysis (EDA) and generate insights using data visualization techniques with *ggplot2*.
    4. Conduct statistical tests and basic predictive modeling with R.
    5. Apply data analysis skills to real-world projects in sectors such as health, education, finance, or governance.

Course Outline

1. **Introduction to R and RStudio**
    - Installing R & RStudio
    - Navigating the RStudio interface
    - Writing and running R scripts
2. **Working with Data in R**
    - Importing CSV, Excel, and web-based data
    - Data types and structures
    - Data frames, lists, and vectors
3. **Data Cleaning and Manipulation**
    - Handling missing values
    - Filtering, selecting, and arranging data with `dplyr`
    - Merging and reshaping datasets with `tidyr`
4. **Data Visualization with ggplot2**

- Creating bar charts, histograms, boxplots, and scatter plots
- Customizing themes and labels
- Creating dashboards and reports

5. **Descriptive Statistics**
   - Measures of central tendency and dispersion
   - Frequency tables and cross-tabulations
   - Summary statistics by group

6. **Inferential Statistics**
   - Hypothesis testing: t-tests, chi-square, ANOVA
   - Confidence intervals
   - Interpreting p-values and statistical significance

7. **Regression and Correlation Analysis**
   - Linear regression modeling
   - Correlation matrices
   - Residual analysis and model diagnostics

8. **Time Series and Forecasting (Optional Module)**
   - Time series decomposition
   - Forecasting with ARIMA
   - Visualization of trends and seasonality

9. **R Markdown and Reporting**
   - Creating dynamic reports
   - Exporting to PDF, HTML, and Word
   - Automating data analysis reports

10. **Capstone Project: Real-World Data Analysis**

- Individual or group project using actual datasets
- Presentation of findings
- Feedback and course wrap-up

Course Format

- **Duration**: 1 or 2 Weeks (Intensive face-to-face or live online sessions)
- **Tools Needed**: Laptop with R & RStudio installed
- **Assessment**: Quizzes, Assignments, Capstone Project

- **Certificate**: Issued by Magna Skills upon successful completion

Company Overview

Who We Are: Magna Skills is a premier training and capacity-building organization specializing in professional development for government institutions, NGOs, and the private sector.

Our Mission: To provide world-class training solutions that equip professionals with the expertise needed to excel in their careers and contribute meaningfully to their organizations.

Our Vision: To be the leading provider of professional training and development across Africa, fostering excellence, innovation, and capacity-building in public and private sectors.

Core Values

- **Excellence** – Delivering high-quality training tailored to meet the evolving needs of professionals.
- **Integrity** – Upholding the highest ethical standards in all our engagements.
- **Innovation** – Embracing new technologies and methodologies to enhance learning experiences.
- **Customer-Centric Approach** – Ensuring client satisfaction by providing relevant, practical, and impactful training.
- **Collaboration** – Partnering with industry experts and institutions to provide the best learning opportunities.

Our Training Methodology

We use a blended learning approach that includes instructor-led training, case studies, workshops, and post-training support.

Why Choose Magna Skills?

- Experienced Trainers
- Customized Training Solutions
- Interactive Learning
- Global Recognition
- Proven Track Record

Request for Training Form

Complete the form and share with Magna Skills Support Team on email info@magnaskills.com or Send Whatsapp on: +27630079022

Approval & Authorization	
Applicant Details	**Course Details**
First Name:	Course Name:
Last Name:	Training Venue:
Mobile:	Month:
Email:	Training Method: Onine[_____] Face to Face [____]
Company Name:	Duration:
Country:	Number of Staff Members:

By signing this agreement, both parties confirm their commitment to the terms outlined in this proposal.