

## Who is this for?

1. You have encountered some basic statistics/mathematics but have not used R before or have a very casual acquaintance with R and currently wish to use R for Data Analysis and data visualization.
2. You are a student or professional who has not worked with R before and you wish to use R for data analysis
3. You have used R before and wish to refresh your skills in R.
4. You are a decision maker at work and wish to see how R can be used to make better decisions with data in the workplace.

## What will you learn?

1. • The basic R programming concepts for statistical data analysis
2. • Importing and manipulating data in R using R-studio
3. • Descriptive Statistics using R
4. • Data visualization in R
5. • Introduction Linear and Logistic regression

### Payment Mode



**PAYBILL NUMBER:**  
303030  
**ACCOUNT NUMBER:**  
0732252452

**Cost Per  
Person  
Ksh 19,000  
(Discounted)**

## Content of The Course

The course is primarily an introduction to R but will also cover the following basic statistical concepts using R:




- Descriptive statistics (measures of central tendency, measures of dispersion, measures of shape)
- Simple regression and multiple linear regression
- Logistic regression

Each session will have some guided practical exercises with some sample data to give the participants a hands-on feel for better understanding and retention of the concepts taught.




The course will pursue the “understand it all” philosophy as opposed to the “show me all” philosophy

### Trainers

(Department of Mathematics, UoN)

-  Dr. James Katende
-  Dr. Davis Bundi
-  Prof. Joseph Mwaniki

### Contact us:

-  0748737669 / 0720206866
-  lmarangu@uonbi.ac.ke/  
allan.haggai@uonbi.ac.ke
-  UoN, Chiromo Campus



# LEARNING R FOR DATA ANALYSIS



## SEPTEMBER 2022 (VIRTUAL)

## DAY 1

### Basics of R

- Downloading and installing R
- Basics of R (arithmetic operations, vectors, matrices, sequences)
- Variables, Data types
- Packages in R
- Quitting R and setting the working directory

### Getting Data Into R

- Typing in small data sets
- Using c, cbind, rbind to combine data
- Combining data with the vector function
- Combining data using matrices
- data frames, combining data using lists

### Importing and Manipulating Data in R

- Importing Data into R
- Accessing variables, managing subsets of data
- combining data sets, exporting data, re-coding categorical variables
- reshaping data
- Getting Data from the Web

## DAY 2

### Simple Functions

- The tapply, sapply, lapply, summary and table functions.

### Basic Plotting tools

- The Plot function

### Loops and Functions

- Loops and functions

## DAY 3

### Data Visualization

- Graphing tools in R
- bar charts, pie charts, box plots, Cleveland and dot plots, the pair plot, panel functions, combining types of plots
- Introduction to the lattice package

### Introduction to regression with R

- Linear Regression
- Logistic regression

## Prerequisites

1. Experience in other programming languages will be an advantage but not a prerequisite. At the end of this course the student will be in a position to go for an advanced course on Data analysis/analytics using R.
2. Some Basic Knowledge in statistics
3. Basic operational knowledge of computers is necessary.

## Equipment

- Participants are required to have their own laptops with R installed where possible.
- The laptop should be internet ready.
- WiFi will be available on site.

