

# Introduction to R

## Course Outline

- Administration and Course Materials
- Course Structure and Agenda
- Delegate and Trainer Introductions

### Session 1: VARIABLES

- About R
- Installing R
- CRAN and R Documentation
- Console
- R Studio
- Popular R Packages/Libraries
- Installing, Loading and updating Packages
- Working Directory
- Scripts
- Saving Work and Exiting R
- Comments and reserved words
- Statements and Statement Grouping
- Resources
- Help

### Session 2: R AS A BASIC CALCULATOR

- Arithmetic with R
- Operators
  - Assignment
  - Arithmetic
  - Comparison
  - Logical
- R's 'Scalar' types'

### Session 3: DATA STRUCTURES

- Atomic Vectors
  - What are atomic vectors?
  - Creating vectors
  - Vector arithmetic
  - Calling functions on vectors
  - Accessing elements of a vector
  - Sub-setting a vector
- Matrices
  - Creating matrices
  - Subsetting

- Matrix Arithmetic and Inversion
- Lists
  - Defining lists
  - Creating lists
  - Named lists
  - Accessing elements
- Data Frames
  - Defining data frames
  - Creating data frames
  - Accessing data