Department of Statistics and Business Analytics

Statistical Consulting Unit

Workshops/Training courses

Title: Introduction to Data Analytics using R

Statistical Software: R

Requirements: R and R-Studio

Instructor: Dr. Zardad Khan

Target Group: Students and Faculty

Date: 3-9 March, 2025 (The time is flexible)

Period: (12 Hours), **3** days, 4 hours/day

Platform: Face-to-face Meeting

Inclusive of Scientific Materials: PowerPoint Slide Presentation, Online Resources and E-Certificate.

Description:

R is one of the best programming languages specifically designed for statistics and graphics. Programming in R is a fast and effective way to perform advanced data analyses and manipulations. In this course, you will learn how to use R and utilize the many data analysis techniques, methods, and functions it has to offer to professional researchers. Basic concepts and techniques in programming such as recognizing and changing data types, reading in and writing out data, indexing, loops, creating functions, iterations, manipulating data and creating plots will be covered. Frequently used statistical data analysis techniques will also be covered. By the end of this course, you will be able to use R for your own data analysis.

Topics Covered:

Day 1:

1. What is R?
2. Philosophy and concept of R
    a) user interface and concept
    b) editors
    c) getting help for R
3. Simple programming
    d) operations/functions/values
    e) vectors/matrices

    f) data sets

    g) writing your own functions

Day 2:

1. Data Management
    a. Import and view data sets
    b. Modify and restructure data sets
    c. Select rows and columns of a data set
    d. Manipulate data sets (sort, transform, insert or delete rows/columns)
    e. Save data sets
2. Descriptive Statistics
    a. Measures of location & measures of spread
    b. Correlation Simple analyses
    c. Missing values
    d. Frequency & contingency tables
    e. Save results
3. Graphics
    a. Introduction
    b. Types of graphics
        i. incl. formatting
        ii. adding titles, legends, formulas, . . .
    c. Save graphics

Day 3:

1. Diagnostic tests
    a. Definitions and Basics
    b. Quality of Diagnostic Tests
    c. ROC Analysis
2. Statistical Tests
    a. Various parametric and non-parametric tests
3. Linear Models
4. Variable Selection
5. Logistic Regression

Workshop Fee: 1500 AED*

Contact US: statconsult@uaeu.ac.ae

*20% off for UAEU students