

INTRODUCTION TO STATISTICAL ANALYSIS USING R

This course will introduce the participants to R and teach them how to carry out both descriptive and inferential statistics using R structure for further use.

Who is this programme for: This programme is for anyone who is new to R and/or Statistical Analysis.

Key Topics Covered:

- Introduction to R using RStudio:
 - Installing packages, data types/classes, importing data, writing and running a script, creating functions, etc...
- Descriptive Statistics:
 - Basic visualisation (including histograms, bar-charts, scatterplots, etc...), computation of mean, median, variance, range and other statistics.
- Inferential Statistics:
 - Correlation, regression and hypothesis testing of qualitative and quantitative data (including t-tests, ANOVA, non-parametric and chi-square tests).

Duration:

- Day 1: Introduction to R and Descriptive Statistics.
- Day 2: Regression, t-tests and chi-square testing using R.
- Day 3: ANOVA and non-parametric testing using R.

Teaching Approach:

The tutor will use a highly practical approach to deliver this course. Learners will have access to R/RStudio on their own laptops/PCs, providing them with the immediate opportunity to implement and reinforce the material presented throughout the course.

Prerequisites:

Learners are expected to be familiar with the very basics of R. This can be achieved by enrolling in an online free course similar to one available with [Data Camp](#). Prior knowledge of statistical analysis is not required, however knowledge of basic mathematics will be assumed.

Equipment/Software Needed: Each learner will require their own laptop/PC with both R and RStudio installed. Laptops/PCs will also require internet access throughout the course.

Tutor:



Dr. Denise Earle

Academic Profile:

In September 2010, I completed a PhD in Statistics at Maynooth University. My thesis focussed on the use of statistical techniques to improve data visualisation. Prior to my PhD, I completed an MA in Mathematics and a BA in Mathematical Studies and Statistics.

Professional Profile:

Since September 2017, I have been a lecturer at the Institute of Technology Carlow. The majority of the courses I teach are related to data analysis, with key courses focussing on the application of statistical techniques to digital marketing data and sports performance data.

Prior to my position with IT Carlow, I spent five years working as a Data Scientist for Paddy Power Betfair. During my time here, I developed several data models including segmentation models using techniques like k-means clustering and prediction models using techniques like classification trees. These models formed the basis of many marketing strategies implemented by the various marketing teams.