# CODING IN R

**Silvia Montagna**

## Learning Objectives

The module is aimed at providing the students with a basic knowledge of the R software. At the end of the module, the students should possess a basic set of tools to undertake their own data analysis in most standard cases. Moreover, they should be comfortable exploring new R packages, when required, for more advanced applications.

## Course Content

The module is an introduction to the R language and mainly covers the following topics:

1) Basic data types
2) Data structures
3) Control structures/loops and functions
4) Reading and writing data
5) Functions related to classical probability distributions
6) Tools for data manipulation (dplyr package) and data visualization (ggplot2)

## Course Methodology

The course will be held in the computer lab. Students will be taught how to write their own code through concrete examples. Students are encouraged to actively interact in class and will be asked to work on problem sets assigned during the lessons.

## Reference

R software: http://www.r-project.org/. Code examples will be presented during the course

## About the Instructor

Silvia Montagna obtained a PhD in Statistical Science at Duke University (USA) in November 2013. She then moved to the University of Warwick (UK) as a post-doctoral research fellow, and worked on developing statistical methodology for neuroimaging meta-analysis data. In January 2017, she joined the School of Mathematics, Statistics, and Actuarial Science at the University of Kent as Lecturer in Statistics. Since January 2018, Silvia is Assistant Professor in Statistics in the ESOMAS Department at the University of Turin. Her research interests are in developing Bayesian statistical methodology motivated by high-dimensional applications.