



## Introductory Course of R and RStudio

### Statistical Programming with R

(Contents and proposed schedule)

| Content   | Time   | Day      |
|---|--|----------|
| <b>Module I.</b> Introduction to programming in R and RStudio<br>Download, Installation and Maintenance of R, RStudio and additional packages<br>Coffee break<br>Introduction to the R Software and the RStudio Graphical user Interface (GUI)<br>Operation of the Workspace and Scripts<br>Lunch break | 09:00 – 11:30<br><br>11:31 – 11:59<br><br>12:00 – 13:30<br><br>13:31 – 14:29 | <b>1</b> |
| <b>Module II.</b> Introduction to the Object Oriented Programming (OOP)<br>Data Import and Pre-processing<br>Basic Data Processing for Statistical Purposes<br>Coffee break<br>Introduction to the graphical package “ggplot2”  | 14:30 – 15:30<br><br>15:31 – 16:29<br><br>16:30 – 17:30                      |          |
| <b>Module III.</b> Exploratory Data Analysis (EDA)<br>Advances features of graphical package “ggplot2”<br>Coffee break<br>EDA for Statistical Purposes<br>Assumptions of Linear Models: Normality, Heterogeneity, Independence<br>Lunch break   | 09:00 – 11:30<br><br>11:31 – 11:59<br><br>12:00 – 13:30<br><br>13:31 – 14:29 | <b>2</b> |
| <b>Module IV.</b> Statistical Data Analysis<br>Introduction to Linear Models<br>Coffee break<br>Examples and details of (ANOVA, ANCOVA, Linear Regression)  | 14:30 – 15:30<br><br>15:31 – 16:29<br><br>16:30 – 17:30                      |          |
| Student work on (their own) projects<br>Coffee break<br>Presentation of results and final discussion  | 09:00 – 11:30<br><br>11:31 – 11:59<br><br>12:00 – 14:00                      | <b>3</b> |