Juluis Foyet

Data Analyst

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Agenda of an R language course for statistical computing

Proposed by**: Juluis Foyet**

For**: Absolute beginners and intermediate R users**

Prerequisites:

- The learner should have a well-functioning 64 bits (preferably) laptop;
- Knowledge of basic statistics would be an advantage.

Syllabus (5 Modules, 40 hours)

Time (Duration)	Titles	Day
Module I: Overview (4h)		
(1h)	**M1L01** – Presentation of R, The working directory, and the script	**dd/mm/yyyy**
(1h)	**M1L02** – Operators and basic operations in R language	
(30 mins)	**M1L03** – Project management RStudio	
(45 mins)	**M1L04** – Data types and structure	
(45 mins)	**M1L05** – Packages	
Module II: Data entering, importation, and exploration (5h)		
(2h)	**M2L01** – Data entering	
(2h)	**M2L02** – Data importation	
(1h30)	**M2L03** – Exploratory data analysis I (Numerical approach)	
(1h30)	**M2L04 –** Exploratory data analysis II (Graphical approach)	
Module III: Data manipulation, descriptive data analysis, and results reporting (12h)		
(2h)	**M3L01 –** Data cleaning	
(2h)	**M3L02 –** Data sub-setting	
(2h)	**M3L03 –** Creation of new variables	
(2h)	**M3L04 –** Descriptive data analysis I **(**Numerical approach**)**	
(2h)	**M3L05 –** Descriptive data analysis II **(**Graphical approach**)**	
(2h)	**M3L06 –** Introduction to RMarkdown	
Module IV: Common statistical tests (9h)		
(2h)	**M4L01 –** Analysis of contingency tables: Pearson Chi2 test, Fisher exact test and correspondence analysis	

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Time (Duration)	Titles	Day
(2h)	**M4L02 –** Two groups comparison: Student t-test, Mann-Whitney Wilcox test, paired and unpaired	
(2h)	**M4L03 –** Three+ groups comparison I: ANOVA and posthoc (Tukey Honest Significant Difference)	
(2h)	**M4L04** – Three+ groups comparison II: Kruskal-Wallis test and posthoc (Pairwise Wilcoxon test and Dunn test)	
(1h)	**M4L05 –** Correlation analyses: Pearson, and Spearman correlations	
Module V: Data visualisation and advanced tools (10h)		
(3h)	**M5L01 –** Qualitative data visualisation	
(2h)	**M5L02 –** Qualitative/Quantitative data visualisation	
(2h)	**M5L03 –** Quantitative data visualisation	
(3h)	**M5L04 –** Introduction to regression analyses	