**Getting started with R for Data Wrangling, Visualization and Data Analysis**

1. **Introduction to R**
2. Starting R
3. Simple manipulation (R as an overgrown calculator)
4. Introducing R studio IDE
   1. The environment (console, scripting and graphic window)
   2. Difference between R and Rstudio
5. R language – how does R work (assignment vs expression)
6. R objects and how to create them
   1. Vectors
      1. Atomic vectors (homogenous)
         1. Character
         2. Integer
         3. Double
         4. Logical
      2. Lists (heterogenous)
   2. Factors
   3. Matrices
   4. Data frames
7. Introduction to packages
   1. Installing packages
   2. Loading packages
8. **Intermediate R**
9. Operations with R objects
   1. Simple manipulation
   2. Sub-setting objects in R --- next topic series
10. **Getting started with data manipulation in R (basic and advanced)**
11. Introduction to R inbuilt datasets
12. Getting started with working directories
13. Reading data from external sources
    1. Exporting data external.
14. Basics of data management – introduction **dplyr**
    1. Selecting column names
    2. Filtering rows
    3. Creating new columns
    4. Grouping and summarizing data
15. Advanced data management (data transformation)
    1. Long format
    2. Wide format
16. **Introduction to data visualization**
17. Introduction to ggplot2
18. Basic types of plots
    1. Bar plot (stack and dodged)
    2. Box plot
    3. Scatter plot
    4. Line plot
    5. Histogram and density plot
19. Customizing you plots
    1. Adding title
    2. Labelling axis
    3. Colour schemes and themes
20. **Introduction to statistical analysis and inference in R (from stats package, which a base R package)**
21. One and two sample statistical tests
    1. T-test and the family
22. Linear Models
    1. Linear regression
    2. Analysis of Variance

Reference materials and texts

* R for Data Science - <https://r4ds.had.co.nz/>
* R in action; 2nd Edition - <https://www.manning.com/books/r-in-action-second-edition>
* Advanced R; 2nd Edition - <https://adv-r.hadley.nz/>