Course Sequence/schedule

Course Instructor: Ayush Patel

Lecture 1: The basics and some nit bits
- What is R? What is RStudio?
- Navigating RStudio Cloud for the workshop
- Executing commands
- Objects, Object types and Creating Objects
- Basic arithmetic
- Conditional statements
- Missing values and its behaviour

Lecture 2:
- Some useful functions
- Brief intro to working directory
- Importing data from excel
- Exporting data to excel

Lecture 3: Data Wrangling
- Conditional filtering/subset of observation
- Selecting desired columns
- Update and/or create new columns
- Frequencies of observations under a categorical variable
- Summaries (mean, median, mode) of variables in data, Grouped summaries
- Arranging observations by variable values
- Using the pipe operator

Lecture 4: Data Visualization
- Grammar of graphics - the idea of layered graphics
- Geometries
  - Point
  - Bar
  - Column
  - Boxplot
  - Smooth
  - Line
- Labels
- Saving the graph

Lecture 5:
- Working with scales
- Facets of charts

Lecture 6: Implementation of Statistical tools

- Generating different distributions
  - Normal
  - Binomial
- Variance
- Standard Deviation
- Hypothesis tests
  - t -test
  - Chi square test
- Linear model and its elements

Lecture 7/8: More Data Wrangling

- Regrouping or classifying a variable in groups using case when
- Joining data sets
- Pivot data sets
- Other tidyr operations for tidy data