# Syllabus : Introduction to R for Research Scientists

Spring 2020

### Instructor: Fred LaPolla, MLS

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Slack messaging strongly preferred

### Duration: 3 weeks, Thursday April 2 - April 21

Note: Dates and topics subject to change.

### Overview:

An introductory class for beginners in R for data analysis. This Zoom-based clas will address getting up and running with R and R Studio, data types, data structures, the use of functions and their arguments, data cleaning/transformations, and data visualization, with the goal of preparing students for RNA Seq analysis/subsequent bioinformatics training in R.

### Objectives:

Students will be able to read and program in R syntax including:

* Loading data into R
* Creating and naming variables
* Cleaning data
* Conducting basic exploratory data analysis.

### Pre-requisites:

Students are not expected to have any prior knowledge of R, but are expected to have worked with tabular data (i.e. spreadsheets) and have a basic familiarity with descriptive statistics.

### Software needed:

Please first install R, and then install R Studio. A guide to doing this can be found at: https://www.datacamp.com/community/tutorials/installing-R-windows-mac-ubuntu

### Schedule

Thursday April 2 3:00-4:30

Session 1: Introduction to R and R studio; why one would use R; loading in data; assigning variables; intro to packages; troubleshooting

Tuesday April 7 3:00-4:30

Session 2: Data structures and data types in R

Thursday April 9 3:00-4:30

Session 3: Functions

Tuesday April 14 3:00-4:30

Session 4: Visualization

Thursday April 17 3:00-4:30

Session 5: Data cleaning and manipulation

Tuesday April 21 3:00-4:30

Session 6: Tying it all together

Communication: Please post questions in the class Slack, NYUMC Coding Courses, or on the class stack exchange