**How To Learn To Code: Introduction to R**

Summer 2016 Syllabus

**Basic information**

**When:** 1:00 pm – 2:00 pm, Mondays, June 13th – August 1st, 2016 (8 weeks).

**Where:** Location

**Materials and Communications:**  All materials for this course will be posted on the course website (<http://mauriziopaul.github.io/intro-to-r/overview)>. Slack will be used for posting homework assignments and communications regarding the course between classes.

**Restrictions:** Class is limited to **XX** students.

**Instructors**

**Instructor:** Katrina Kutchko, email: kutchko@email.unc.edu.

**instructor:** Paul Maurizio, email: maurizio@email.unc.edu.

**Target Audience**

This course is targeted at graduate students in the biomedical sciences who are working in experimental laboratories but must perform quantitative analyses or visualize quantitative data at some point in their research. It has moderate emphasis on examples found in genetics and genetic epidemiology, but is otherwise general, using subject non-specific examples to provide intuition about statistical techniques commonly used in biomedical research. In addition to biomedical science students, it may also be of interest to graduate students in related disciplines, including epidemiology and health sciences.

**Course Prerequisites**

**Course Goals and Key Learning Objectives**

This course will introduce the free and increasingly popular statistical analysis and graphics package R, and teach fundamental statistical concepts students are likely to encounter in biomedical research. The course has no formal requirements, but it is hoped that by the end students will have made progress in the following areas:

* **Main goal:** To be comfortable and proficient in approaching a novel coding task in R
* Perform simple calculations
* Make simple plots
* Performing multiple operations at once
* Troubleshoot an error
* Find help on a function
* Identify problems with your code/analysis (critical self-analysis)
* Write “clean” data
* Clean your “dirty” data

**Core competencies**: making graphs in R, data wrangling, basic data analysis, interpretation of results from linear modeling.

**Lectures**

All lectures will be available as pdf at the website. Some lectures will also have html pages on the website.

**Homework Assignments**

Assignments will be distributed at the end of class. Answers will be posted the day before the next class. Homework assignments will not be graded, but they are meant to be useful for your personal development and learning.

**Communication**

We will be using Slack (<https://slack.com)>, at the domain learnr-2016.slack.com for posting homeworks and peer-to-peer conversation.

**Course Project**

We will post the course project description to the website and to Slack after the first or second lecture. We hope it will build upon the learning from all the lectures, and we will dedicate the last class to discussing how to approach the project.

**Course Evaluation**

At or near the end of the course, we hope to provide evaluations in the form of a survey to get participants’ feedback.

**Course Policies**

**Course Resources:**

**Expectations:**

**Calendar**

Lecture Date Room Instructor Topic

**Syllabus Changes**

The co-instructors may make changes to the syllabus according to the needs of the class.