Syllabus

Epi/Biostats Winter Institute - Introduction to R for Public Health Researchers 140.604.73

Class Website: http://jhudatascience.org/intro_to_r/
CoursePlus: https://courseplus.jhu.edu/core/index.cfm/go/syl:syl.public.view/coid/16733/

Zoom link will be emailed to students.

Day/Time: Jan 10 - 21: 8:30AM-11:50AM on Zoom

Instructors: Carrie Wright (cwrigh60@jhu.edu), Ava Hoffman (ava.hoffman@jhu.edu), and Candace Savonen(csavone1@jhu.edu)

TAs: Grant Schumock (gschumo1@jhmi.edu) and Qier Meng(qmeng11@jhmi.edu)

Communication will mainly occur through Slack and we will email you about how to connect to slack.

Overview: This course will provide "hands-on" training for learning how to analyze data in the R statistical software package. We will cover data input/output, data management and manipulation, and how to make useful and informative graphics

Course Format: Each class will consist of 2 or 3 hour-long modules: each module features a lecture and an R programming lab, where student apply the skills taught in the modules to real data.

By the end of the course, students should be comfortable:

- Reading data into R
- Recoding and manipulating data
- Using R add-on packages
- Making exploratory plots
- Performing basic statistical tests
- Understanding basic programming syntax
- Creating reproducible R documents

Tentative Schedule:

Day Overview

Time (EST)	Content
8:30am - 9:30am	Session 1
9:30am - 9:40am	Break
9:40am - 10:40am	Session 2
10:40am - 10:50am	Break
10:50am - 11:50am	Session 3

Day 1

- Introduction
- RStudio
- Reproducible Research

Day 2

- Basic R: Variables/Objects in R
- Data Input/Output

Day 3

- Subsetting Data
- Homework 2

Day 4

- Summarization
- Data Classes

Day 5

- Data Cleaning

Day 6

- Data Manipulation
- Homework 3

Day 7

- Data Visualization

Day 8

- Statistics
- Work on Final Project

Day 9

- Functions
- Good code practices
- Work on Final Project

Grading

1. Attendance/Participation: 20% (Please let the instructors know if attendance will be difficult for you.)
2. Homework: 3 x 15%
3. Final "Project": 35%