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](mailto:cwrigh60@jhu.edu)), Ava Hoffman ([ava.hoffman@jhu.edu](mailto:ava.hoffman@jhu.edu)), and Candace Savonen([csavone1@jhu.edu](mailto:csavone1@jhu.edu))

TAs: Grant Schumock ([gschumo1@jhmi.edu](mailto:gschumo1@jhmi.edu)) and Qier Meng([qmeng11@jhmi.edu](mailto: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%