Introduction to statistical software (EPIB 613)

Course walkthrough

Fall 2019

Instructor: Asad Haris

Course logistics

- Location: EDUC 211
- Time: Thursdays, 2:35pm-3:55pm
- Credits: 1
- Exams: none
- Assignments: 3
- Contact: **asad.haris@mail.mcgill.ca**
- Office hours: after class or by appointment

Course objectives

- Introduction to R: statistical software
- Other modern tools: rstudio & rmarkdown
- Basic data management and analysis
- Hands-on experience
- Preparation for other courses and research

Course requirements & evaluation

- Pass/fail course
- In order to pass:
  - Attend
  - Participate*
  - Do your homework

*Participate = bring a laptop (or befriend someone who has one), load the software, follow along with the lectures

Assignments

- Due at 5pm on the day of the deadline
  - Submit via myCourses
  - Late assignments penalized 10% per day
- Completed assignments **must** be in PDF
- Written responses must be your own
  - Plagiarism rules *strictly* enforced

Date	Class	Assignments
5 Sep 2018	Lecture 1: Introduction	
12 Sep 2018	Lecture 2: An Overview of R-Part I	
19 Sep 2018	Lecture 3: An Overview of R-Part II	
26 Sep 2018	Lecture 4: Data Management-Part I	
3 Oct 2018	Lecture 5: Data Management-Part II	**HW 1 assigned**
10 Oct 2018	Lecture 6: Graphics with R	**HW 1 due**
17 Oct 2018	Lecture 7: Descriptive statistics with R (quantitative)	
24 Oct 2018	Lecture 8: Descriptive statistics with R (categorical)	
31 Oct 2018	Lecture 9: Basic statistical tests with R	
6 Nov 2018	Lecture 10: Regression with R (linear)	**HW 2 assigned**
14 Nov 2018	Lecture 11: Regression with R (logistic/Poisson)	**HW 2 Due**
21 Nov 2018	Lecture 12: Regression with R (survival)	**HW 3 assigned**
28 Nov 2018	Lecture 13: Some Advanced topics	**HW 3 Due**

A few notes

- This is a “standardized course”
  - These course notes constitute a user guide
  - The advanced concepts will become clear as you move through the MSc/PhD program (I promise)
- Take advantage, and:
  - Be patient (with yourself, with R, with me)
  - Don’t panic
  - Understand the importance and utility of every analyst’s secret to success: Google!

Software options

- Popular software packages for quantitative analysis:
  - R
  - Stata
  - SAS
  - SPSS
  - Many more…
- Your supervisor might ask you to learn a second program (this is a good thing)

Good practice

- Regardless of your software package, always
  - Save and annotate your analytical code
  - Use this course to develop good coding practices
  - Ask yourself if a stranger could walk in and easily reproduce your findings
  - More importantly, make sure **you** can reproduce your findings…even if you're revisiting an analysis much later (this happens a lot)
- Key word = reproducible