

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!

Why not to panic

- Learning new software/ programming language is frustrating at first for *everyone*
- Any issue you might have, chances are someone else already faced and resolved the issue
- >70% chances *I have* faced a similar issue
- Google & stackoverflow are your friends
- If stuck, **ask for help!**

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**