# Introduction to statistical software (EPIB 613)

Course walkthrough

Fall 2018

Instructor: Yi Lian

# Course logistics

- Location: EDUC 437
- Time: Thursdays, 11:35am-12:55pm
- Credits: 1
- Exams: none
- Assignments: 3
- Contact: **yi.lian@mail.mcgill.ca**
- Office hours: after class or by appointment

# Course objectives

- Introduce you to statistical software (R)
- Guide you through basic data management and analysis
- Provide hands-on experience
- Prepare you for EPIB 603…

# 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 |
|---|---|---|
| 6 Sep 2018 | Lecture 1: Introduction | |
| 13 Sep 2018 | Lecture 2: An Overview of R-Part I | |
| 20 Sep 2018 | Lecture 3: An Overview of R-Part II | |
| 27 Sep 2018 | Lecture 4: Data Management-Part I | |
| 4 Oct 2018 | Lecture 5: Data Management-Part II | **HW 1 assigned** |
| 11 Oct 2018 | Lecture 6: Graphics with R | **HW 1 due** |
| 18 Oct 2018 | Lecture 7: Descriptive statistics with R (quantitative) | |
| 25 Oct 2018 | Lecture 8: Descriptive statistics with R (categorical) | |
| 1 Nov 2018 | Lecture 9: Basic statistical tests with R | |
| 7 Nov 2018 | Lecture 10: Regression with R (linear) | **HW 2 assigned** |
| 15 Nov 2018 | Lecture 11: Regression with R (logistic/Poisson) | **HW 2 Due** |
| 22 Nov 2018 | Lecture 12: Regression with R (survival) | **HW 3 assigned** |
| 29 Nov 2018 | Lecture 13: Overview of 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 also:
  - Be patient (with yourself, with R, with me)
  - Don’t panic
  - Understand the importance and utility of every analyst’s secret to success:


Recherche Google J'ai de la chance

Google.ca, offert en : English

# 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
  - 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 = replicability