STAD29 / STA1007
Statistics for the Life and Social Sciences

Ken Butler

Winter semester 2018

Section 1

Course Outline

Course and instructor

- Lecture: Wednesday 14:00-16:00 in HW 215. Optional computer lab Monday 16:00-17:00 in BV 498.
- Instructor: Ken Butler
- Office: IC 471.
- E-mail: `butler@utsc.utoronto.ca`
- Office hours: Monday 11:00-13:00. Also, Wednesday mornings good. I am often around. See if I'm in. Or make an appointment. E-mail always good.
- Course website: `www.utsc.utoronto.ca/~butler/d29`.
- Using Blackboard for assignments/grades only; using website for everything else.

Text, programs, prerequisites and exclusions

- There is no official text for this course. You may find `http://r4ds.had.co.nz/` helpful for R background.
- Prerequisites:
  - For undergrads: STAC32. Not negotiable.
  - For grad students, a first course in statistics, and some training in regression and ANOVA. The less you know, the more you'll have to catch up!
- This course is part of Applied Statistics minor.
- Exclusions: **this course is not for Math/Statistics/CS majors/minors**. It is for students in other fields who wish to learn some more advanced statistical methods. The exclusions in the Calendar reflect this.
- If you are in one of those programs, you won't get program credit for this course, **or for any future STA courses you take.**

Computing

- Computing: big part of the course, **not** optional. Demonstrate that you can use R to analyze data, and can critically interpret the output.
- For grad students who have not come through STAC32, I am happy to offer extra help to get you up to speed.

Computing and assessment

- Grading: (2 hour) midterm, (3 hour) final exam. Assignments most weeks, due Tuesday at 11:59pm. Graduate students (STA 1007) also required to complete a project using one or more of the techniques learned in class, on a dataset from their field of study. Projects due on the last day of classes.
- Assessment:

	STAD29	STA 1007
Assignments	20%	20%
Midterm exam	30%	20%
Project	-	20%
Final exam	50%	40%

- Assessments missed *with documentation* will cause a re-weighting of other assessments of same type. No make-ups.
- You **must pass the final exam** to pass the course. If you fail the final exam but would otherwise have passed the course, you receive a grade of 45.

Plagiarism

- `http://www.utoronto.ca/academicintegrity/` `academicoffenses.html` defines academic offences at this university. Read it.
- Plagiarism is defined (at the end) as

  > *The wrongful appropriation and purloining, and publication as one's own, of the ideas, or the expression of the ideas ... of another.*

- The code and explanations that you write and hand in must be *yours and yours alone*.
- When you hand in work, it is implied that it is *your* work. Handing in work, with your name on it, that was actually done by someone else is an *academic offence*.
- If I am suspicious that anyone's work is plagiarized, I will take action.

Getting help

- The English Language Development Centre supports all students in developing better Academic English and critical thinking skills needed in academic communication. Make use of the personalized support in academic writing skills development. Details and sign-up information: `http://www.utsc.utoronto.ca/eld/`.
- Students with diverse learning styles and needs are welcome in this course. In particular, if you have a disability/health consideration that may require accommodations, please feel free to approach the AccessAbility Services Office as soon as possible. I will work with you and AccessAbility Services to ensure you can achieve your learning goals in this course. Enquiries are confidential. The UTSC AccessAbility Services staff are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations: (416) 287-7560 or by e-mail: `ability@utsc.utoronto.ca`.

What we (might) cover, part 1

1. R Scripts, projects and R Markdown: organizing your work

2. Review of (multiple) regression

3. Logistic regression (ordinal/nominal response)

4. Survival analysis

5. Analysis of variance

6. Analysis of covariance

7. Multivariate ANOVA

8. Repeated measures by profile analysis

9. Discriminant analysis

What we (might) cover, part 2

10. Cluster analysis

11. Multidimensional scaling

12. Principal components

13. Exploratory factor analysis

14. Confirmatory factor analysis

15. Multiway frequency tables