In this course

- Data analysis: use mostly known (to you) statistical methods to gain insight about data.
- Use two software packages, SAS and R — I assume you know nothing about these.
- Look at lots of examples.
- "Get your hands dirty".
- Writing reports.
- Other tasks in R and SAS.

Prerequisites

- You *need* a second Statistics course that covers statistical inference from a mathematical viewpoint, one of these:
  - STAB57
  - STA 248
  - STA 261
- I check prerequisites.
- You need STAB57 for the Statistics Minor/Major/Specialist programs.

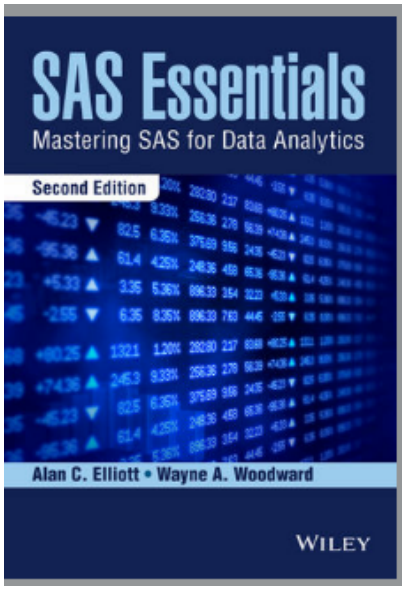
The instructor, lectures and tutorials

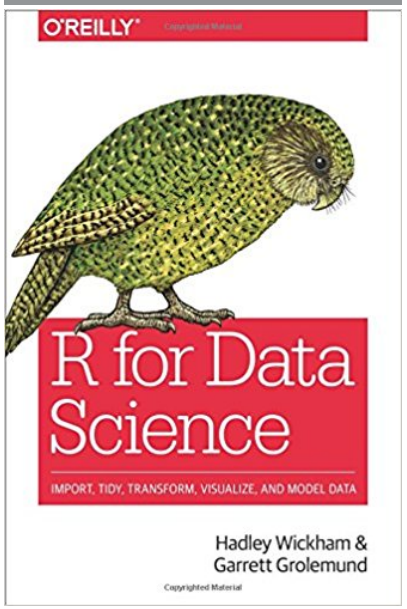
- Ken Butler, office IC 471, e-mail: mailto:butler@utsc.utoronto.ca
- Lectures (section LEC01): both of
  - Tuesday 12:00-13:00 in IC 220
  - Thursday 14:00-15:00 in SW 128.
- Students in section LEC60 should watch the videotaped lectures (access from Quercus).
- Tutorial: one of
  - Monday 09:00, 10:00, 11:00, 12:00, in BV 498 (1 hour each).
- Office hours: Tuesday 14:00-15:00, Thursday 15:00-16:30. Or by appointment (e-mail me, address above, to set one up).
- course website **here**.
- This course is on Quercus. Go **here**, log in, and find this course among your courses. Assignment hand-in, grading and marks will be done through Quercus.
- E-mail: Use only UTSC/UToronto e-mail address. I aim to respond within two working days. Non-simple questions: office hours/tutorial.

Text(s)

Recommended:

- "SAS Essentials: Mastering SAS for data analytics" by Alan C. Elliott and Wayne A. Woodward, publ. Wiley. ISBN 978-1-119-04216-7.
- "R for Data Science" by Hadley Wickham and Garrett Grolemund, publ. O'Reilly, ISBN 978-1-491-91039-9. Also available (free) online at http://r4ds.had.co.nz/.
- "Problems and Solutions in Applied Statistics" by your instructor, free online at ritsokiguess.site/pasias





Structure of course

- 3 hours/week of class time.
- Of these, 1 hour in computer lab ("tutorial"):
  - practice what you learned from lecture
  - you can work on your assignment or on the additional problems listed there.
  - Get help if needed (instructor/TA available)

Course material (C33)

R:

- Installation / connection
- Reading data files (of different sorts)
- Making graphs
- Numerical summaries
- Statistical inference
- Reports
- Tidying and organizing data
- Case studies
- Functions
- Dates and times
- Miscellaneous tasks
- Bootstrap
- Bayesian inference with `rstan`

SAS:

- Connection
- Reading in data
- Graphics
- Basic inference
- ANOVA
- Regression

Laptop use

- If you have a laptop, you may find it useful for following along with the use of the software or for taking notes.
- Checking social media or other non-course-specific activity during class distracts from your learning. If you are going to get the most from this course, you need to pay full attention in class. Multi-tasking will not help you.
- Using your laptop for non-course activity will also distract those around you and creates a worse learning experience for everybody. If somebody's inappropriate laptop use is distracting you, let me know. I will create laptop-free zones in class if necessary.

Assessment

Item	Weight
Assignments (most weeks after first). Can study with classmates, but what you hand in must be **entirely your own work**. Due Thursdays at 11:59pm.	15
Midterm exam, 2 hours, open book (see over)	30
Group data analysis report (1–5 people/group). Data analysis on data set of your choosing, using R/SAS/both, report written as described in class. Due last day of classes at 11:59pm.	10
Final exam, 3 hours, open book (see over). **You must pass the final exam to guarantee passing the course.**	45
Total	100

Open book, defined

"Open book" means these are permissible, written/printed versions only:

- the SAS text
- the R text
- my lecture notes
- assignments, yours (graded) and mine (with solutions)
- any other notes that you have made in this course.

Old exams are not permitted.

Missed work and documentation

- No make-up assignments or tests in this course.
- Work handed in late may or may not be accepted (instructor's discretion; instructor's decision is final).
- If you miss assessed work due to illness/injury, complete form **here** and submit to instructor within 10 working days of due date.
- Weight of missed work with appropriate documentation transferred to other assessments of same type.

Academic integrity

- Read and understand **this**.
- Academic dishonesty devalues your degree and those of all other students.
- Cheating and plagiarism taken very seriously.
- Examples of academic offences:
- Using someone else's words/ideas without acknowledgement.
- Obtaining or providing unauthorized assistance on an assignment.
- On test/exam, looking at someone else's answers or allowing someone else to look at yours.
- Pretending to be someone else.
- Falsifying or altering required documentation (eg. doctor's notes).

Penalties

- Penalties include (depending on seriousness of offence) a mark of zero for the work concerned, a mark of zero for the entire course, or suspension/expulsion from the University.
- Penalties are (much) more severe for those caught a second (or third) time.
- "Students who cheat and are not caught will be haunted by the memory of their misdeeds for the rest of their miserable lives." (From here.)

Accessibility statement

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 me and/or 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 (located in S302) are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations: (416) 287-7560 or by e-mail at `ability@utsc.utoronto.ca`.