FALL 2017 M358K (APPLIED STATISTICS) TUTH 9.30-11. COURSE SYLLABUS

INSTRUCTOR: PROF. NGOC M TRAN

Essential information.

- Lectures: Tuesday, Thursday, 9:30 to 11:00AM, CPE 2.212
- Instructor: Prof. Ngoc Mai Tran
- Teaching Assistant: Prateek Srivastava
- Office hours: Tuesday, Thursday, 1PM to 2PM, RLM 11.124
- Official class site: Canvas.
- Official communication method: Piazza. **Link embedded in Canvas under "Modules"**
  `piazza.com/utexas/fall2017/m358k/home`
- Signup link to Piazza's class site:
  `piazza.com/utexas/fall2017/m358k`
- Official course name on Piazza: m358k
- Course description: Exploratory data analysis, correlation and regression, data collection, sampling distributions, confidence intervals, and hypothesis testing. Introduction to the statistical software R.
- This course carries the Quantitative Reasoning flag. Quantitative Reasoning courses are designed to equip you with skills that are necessary for understanding the types of quantitative arguments you will regularly encounter in your adult and professional life. You should therefore expect a substantial portion of your grade to come from your use of quantitative skills to analyze real-world problems.
- Prerequisite: Mathematics 362K with a grade of at least C-.
- Software requirement: R (free). For installation instructions:
  `https://cran.r-project.org/`
- Textbook requirement: OpenIntro Statistics, 3rd edition. (Referred in class as OS3).
  This textbook is free, see `https://www.openintro.org/stat/`.

Date: posted on: August 29th, 2017.

Assessments. Homework: 70%. Final project: 30%

Homework sets appear every two weeks. All homework will be uploaded on the Canvas class site and due two weeks after.
There will be six homework sets. The lowest score will be dropped, so each homework set that is counted will contributes 14% to the total grade. Tentatively, the homework set schedule is

- September 12th
- September 26th
- October 10th
- October 24th
- November 7th
- November 21st (due December 5th as usual)

The homework sets generally involve some computations with R, analyzing a dataset, analyzing some results, writing a report, and critizing the data and methods used.

The final project is a big homework set that involves a student analyze an assigned dataset using R, write a report, and critically comment on the data and methods used. It will be posted on October 31st, and is due December 12th.

How to submit your homework sets and projects.
For all homework sets and the final project, you must submit your report and R source code to CANVAS by the specified deadlines. Printed homework sets are NOT accepted.

Collaboration policy Homework set and final project discussions are especially encouraged on Piazza. However, students must write all reports and R codes **on their own**. There is no joint project in this class.

Tentative schedule by week (subject to change depending on class pace).

(1) Weeks 1-4: discussions on various datasets and introduction to R
(2) Week 5: data exploration
(3) Week 6-7: hypothesis testing
(4) Week 8-9: regression
(5) Week 10-11: sampling and sampling error
(6) Week 12: Bayesian statistics
(7) Week 13-14: Revisions.

What the Professor will do.

- Upload lecture summary and reference relevant sections in the textbook
- Upload datasets and R codes used in lectures
- Check-in on Piazza once a day to answer questions
- Be available for in-person questions during office hours

What the Teaching Assistant will do.

- Check-in on Piazza regularly to answer questions
- Be available for in-person questions during office hours

Tips on how to succeed.

- Be attentive in lectures. Participate in discussions.
- Always go to **Piazza** first when you have questions - be it lecture, homework, final project or R. This is the fastest way to get help!
- Get R installed on your computer as soon as possible, and seek help if you have troubles.
- Go through the lecture R codes, make sure that you understand all the commands, and when you run them, you produce the same output as the professor.
- Get comfortable with R. The homework will help you with this. There are also many free online resources.

Tips on writing reports and answering written questions.

- Keep it short (a couple of paragraphs per question at most). Do NOT write giant essays.
- Answer the questions directly. Don't ramble when you are confused. If you do not understand the question, seek help.
- For a writing guide, I strongly recommend the TINY book *Elements of Style*, Strunk and White.

Policies

Add/drop dates. Please take note of the add/drop deadlines at the university calendar. There are no provisions to adjust scores due to late enrolment. If you realize you want to drop a class after the 12th class day, youll need to execute a Q drop before the Q-drop deadline, which typically occurs near the middle of the semester. See `https://ugs.utexas.edu/vick/academic/adddrop/qdrop`.

Numerical to letter grades. Numerical grades convert to letter grades as follows. A = 94-100, A- = 90-93, B+ = 87-89, B = 84-86, B- = 80-83, C+ = 77-79, C = 74-76, C- = 70-73, D+ = 67-69, D = 64-66, D- = 60-63, F= 0-60.
All numbers are absolute, and will not be rounded up or down at any stage. Thus a B- will be inclusive of all scores of 80.000 through 83.999. The University does not recognize the grade of A+. Final grades might be curved upwards but do not count on it.

Make-ups. No late homework sets or project will be accepted for ANY reasons. Should you have serious medical problem or genuine emergency, please obtain a written or electronic letter from the Student Emergency Serivces. Under exceptional circumstances, I will give partial grade, provided you have a C average on previous coursework.

Services for students with disabilities. The University of Texas at Austin provides upon request appropriate academic accommodations for qualified stu- dents with disabilities. For more information, contact Services for Students with Disabilities at 471-6259 (voice) or 232-2937 (video phone). Please request a meeting as soon as possible to discuss any accommodations.

Religious Holy Days. By UT Austin policy, you must notify me of your pending absence at least fourteen days prior to the date of observance of a religious holy day. If you must miss a class, an examination, a work homework set, or a project in order to observe a religious holy day, I will give you an opportunity to complete the missed work within a reasonable time after the absence.

Academic Integrity. By being enrolled in the class, you have agreed to adhere to the student honor code and the university code of conduct. Violations will be treated as required by the university policy. See the UT Honor Code at `http://catalog.utexas.edu/general-information/the-university/`.

University Resources for Students. The university has numerous resources for students to provide assistance and support for your learning. Here are some resources

- The Sanger Learning Center: `http://www.utexas.edu/ugs/slc`
- The University Writing Center: `http://uwc.utexas.edu/`
- Counseling and Mental Health Center : `http://cmhc.utexas.edu/`

- Student Emergency Services: `http://deanofstudents.utexas.edu/emergency/`
- ITS (technology help) `http://www.utexas.edu/its/`
- Libraries: `http://www.lib.utexas.edu/`

Safety. Important Safety Information from BCAL: If you have concerns about the safety or behavior of fellow students, TAs or Professors, call BCAL (the Behavior Concerns Advice Line): 512-232- 5050. Your call can be anonymous. If something doesnt feel right it probably isnt. Trust your instincts and share your concerns.

Campus safety. See `http://www.utexas.edu/safety/` for more information from emergency evacuation provided by the Office of Campus Safety and Security, 512-471-5767.