QTM 100: Introduction to Statistical Inference

Contact information
Jennifer McGee, Ph.D.
E-mail: jennifer.mcgee@emory.edu

Office: Seney Hall, 311
Office Hours: 2-3pm M/W/F
Phone: 44650

Class
9:30-10:35am MWF
10:45-11:55am MWF

REQUIRED MATERIALS

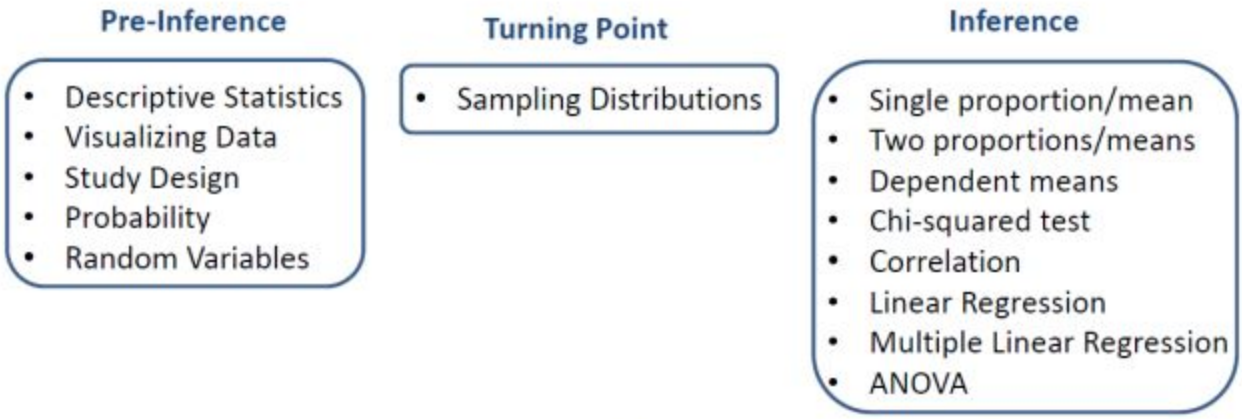
Textbook:
Required: OpenIntro Statistics, 3rd ed, by David Diez, Christopher Barr, and Mine Cetinkaya-Rundel. A free pdf of the textbook can be accessed online at http://www.openintro.org/stat/textbook.php, or you can buy a hard copy on Amazon for around $10.
Although the OpenIntro website is under development, it does have other useful materials such as videos that accompany the text.
You may like: Naked Statistics: Stripping the Dread from the Data. Charles Wheelan
http://www.amazon.com/Naked-Statistics-Stripping-Dread-Data/dp/039334777X

Calculator: A calculator (that is not on your phone) is required for lecture, and is essential for exams. You can use any type of non-phone calculator.

Laptop: All students are required to install the free statistical software, R. Installation instructions are on Blackboard. Laptops are not required in lecture and may be actually be a hindrance to your learning. I reserve the right to ban laptops from lecture, except for those with a documented disability.

COURSE DESCRIPTION

This course provides an introduction to descriptive and inferential statistics. It is designed as a gateway course for students of many academic interests, with emphasis on practice and implementation. The goal of this course is to introduce students to basic statistical concepts and to encourage critical thinking about data. The figure below provides an overview of how the course is organized. Conceptually, this course can be divided into concepts covered before statistical inference (laying the foundation for inference), then a turning point in the semester when we discuss sampling distributions (the underlying theory behind why statistical inference works), and lastly we discuss many methods of statistical inference.



COURSE GOALS

By the end of the course, students should be able to (1) understand the effect of study design on interpretation of statistical results, (2) identify appropriate statistical methods when presented with new data, (3) read and interpret basic statistical literature of various sources, such as newspaper articles and academic journals, and (4) use R as a tool to perform statistical analysis.

Algebra is the only prerequisite for the course. While statistics does involve math, this course will not require you to memorize formulas. Rather, this course focuses on implementation or appropriate statistical analysis and interpretation of results. Consequently, logical reasoning, critical thinking, and writing are also skills that will be emphasized throughout the course.

Common Courtesy

Please use common courtesy in all your decisions. I promise to spend my time designing these classes to be helpful, engaging and as entertaining as possible. This class is designed to give you a basic understanding of many topics you will encounter in other classes. So please respect your fellow students, yourself, and me. Likewise, I will treat you, your schedules, and your concerns with respect and common courtesy.

Accommodations

Students who require accommodations for physical and/or learning challenges should present appropriate documentation before the end of the second week of class, and plan to meet with me individually to discuss accommodations. Your accommodations are YOUR responsibility. **Failure to set up an alternate test time within 2 weeks of the exam could mean the loss of accommodations.**

Honor code

- Improperly placing students' names on assignments or class exercises, or asking other students to write your name on assignments/exercises to which you did not contribute will also be considered violations of the Emory Honor Code.
- Possession of course exams, lab exercises, or homework assignments that are not yours, or from previous classes, will also be in violation of Emory's Honor Code.
- During exams, looking at other student's exam or discussing exam questions will also be considered violations of the Emory Honor Code.
- Memorizing long passages of someone else's work and using that information to answer an essay question on an exam is not acceptable. You must always cite your sources if the idea is not your own.
- Using any source of information (prepared notes, your phone, the internet) that is not given to you by the instructor to complete an exam is a violation of the Emory Honor Code.

- These are only highlights of the university code. Please read the code in its entirety. You will be required to sign a pledge stating that you have read the honor code and that you abide by it in its entirety.
- **Infractions of the honor code will result in a zero for the assignment/exam and will be referred to the honor council.**

For a copy of Emory University's Honor Code:
http://www.college.emory.edu/current/standards/honor_code.html

Attendance

- Attendance is NOT required. However, we frequently have opportunities to earn points in class and occasionally have unannounced quizzes. These are NOT available for make-up unless you have an excused absence. Illnesses require a doctor's note.
- You are expected to be present for all exams. If you are sick and think what you have is contagious and therefore, you cannot attend the scheduled exam you must email me prior to the exam AND have a doctor's note that is dated for the day of the exam. You will have one opportunity for a make-up exam. Failure to contact me prior to missing an exam will result in a zero for that grade with no opportunities for make-up.

Grading

There will be a combination of **assignments and in class exercises (including one project)**. These will mostly be completed through Canvas and will be primarily completed in groups.

You will have **ungraded** homework assignments every week. Occasionally, you will be asked to provide the answers to your homework online for credit. The window to submit the answers will be short, thus you'll need to have completed the assignments ahead of time.

Your **lab portion** will be worth **150 points**. All questions related to lab grading and lab exercises should be brought up with Prof. Riner. I can be available for questions related to the statistical concepts and related to R software if necessary.

There will be four quizzes worth **at least 200 points in total**. Statistics, by nature, builds on previously learned topics. While you may not be expressly questioned about topics from previous exams you should expect some crossover to occur. In short: Exams can be cumulative.

The **final exam**, worth **200 points**, will take place
(for the 8:15am class) **Monday 12/12 9am-12pm and will be cumulative.**
(for the 9:30pm class) **Tuesday 12/13 9am-12pm will be cumulative.**

Your final grade will be calculated by totaling all earned points and dividing by the total possible points. This allows me some flexibility with homework assignments, quizzes, etc.

A = 94% and above	C+ = 77-79.99	F = below 60
A- = 90-93.99	C = 73-76.99	
B+ = 87-89.99	C- = 70-72.99	
B = 83-86.99	D+ = 67-69.99	
B- = 80-82.99	D = 60-69.99	

Late Policy

- There is no late policy. All quizzes and assignments are to be turned in on time. Keep in mind that the quizzes and assignments may require the internet. The internet being 'down' is not an excuse, so plan ahead and submit things early.

Email Policy

- You must write "QTM 100" in the subject line of your emails. You must include your full name in the body of the email. I will check my email at least once a day between 1 and 3pm. I will not respond to emails that do not follow the protocol listed above and I may not respond to emails that ask me for extra credit, additional points, re-grading, or for information found in the syllabus.

SI: Pele

- Pele will hold weekly study sessions starting the second week of class. Occasionally, these will be cancelled due to scheduling conflicts.
- These are voluntary and anonymous (in that I will not know if you go or not)
- Pele is NOT a personal tutor. While she may make herself available on occasion for help with homework or understanding course material, do NOT expect it and always be grateful when she can. She is under no obligation aside from the weekly study sessions.

Tutor: Shankar

- Shankar will be available as a QTM tutor this semester. He'll set hours for drop in times, but may be available for additional appointments via email.
- Please do not email him questions, just come to the sessions or ask for a new time.

Additional

- I reserve the right to change or amend this syllabus.
- Student work submitted as part of this course may be reviewed by Oxford College and Emory College faculty and staff for the purposes of improving instruction and enhancing Emory education
- Occasionally, student work may be photocopied and included in my portfolio of professional development.