

SYLLABUS

Class: Math 408 Mathematical Statistics

Prerequisites: Math 407

Course Content: Principles for testing hypotheses and estimation, confidence intervals, methods of moments, maximum likelihood, information inequality, likelihood ratio tests, goodness of fit and nonparametric methods.

Lecture Meeting Time/Location: MWF 10:00-10:50pm CPA100

Instructor: Mark Rychnovsky

Office Hours: Monday 11:00-2:00pm Kap 406A

TA: Abdullah Karakus, karakus@usc.edu

TA Office Hours: TBD

Discussion Section Meeting Time/Location:

- 39632R Tu, Th 2:00-2:50 SOS B37
- 39633R Tu, Th 3:00-3:50 SOS B37

Textbook: Mathematical Statistics and Data Analysis (Third Edition) by John A. Rice

Final Exam: Monday May 8, 8-10AM usual room

Other Resources: An introduction to mathematical arguments

Email Policy:

- My email address for this course is mrychnov@gmail.com
- Do NOT email me with questions that can be answered from this document.

Exam Procedures: Students must bring their USCID cards to the midterms and to the final exam. Phones must be turned off. Cheating on an exam results in a score of zero on that exam. Exams can be regraded at most 15 days after the date of the exam. This policy extends to homeworks as well. All students are expected to be familiar with the USC Student Conduct Code.

Disability Services: If you are registered with disability services, I would be happy to discuss this at the beginning of the course. Any student requesting accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me as early in the semester as possible. DSP is located in 301 STP and is open 8:30am-5:00pm, Monday Through Friday.

<https://dsp.usc.edu>

213-740-0776 (phone)

213-740-6948 (TDD only)

213-740-8216 (fax)

ability@usc.edu

Homework Policy:

- Homeworks are due **11:59pm Thursday** each week except for the first week.
- Homeworks are submitted in blackboard, under the "Assignment" tab. You are allowed unlimited submission "attempts" for an assignment, but only the last submission will be graded. To avoid internet issues, I recommend making your first submission of an assignment well in advance of the deadline. (Note that phone tethering can also give you an internet connection to a computer.)
- Homeworks should be submitted as single PDF documents. One way to create a PDF document from paper homework assignments is the freely available Adobe Scan App.
- Late homework that is less than 24 hours late will be worth half credit. Late homework that is more than 24 hours late will be worth no credit and will not be graded. (This may be rounded a few minutes in your favor, but it is better not to count on it.)
- If you cannot submit homework via blackboard due to unforeseen problems, then send an **email to the TA** with the assignment and CC me. (Note **make sure the email goes to the TA** if I see such an email I will assume the TA has received it already and will not forward it to them to grade.) Avoid doing this repeatedly.
- The **Single lowest** homework score will be dropped. This policy is meant to account for illnesses, emergencies, dropped internet connections, etc.
- You may not use the internet to find answers to homework problems.
- A random subset of the homework problems will be graded each week. It is strongly recommended that you try to complete the entire homework assignment.
- Collaboration on homework assignments is allowed and encouraged, however you must write up your solutions separately.

Grading Policy:

- There will be two midterms and one final.
- The final course grade is weighted as the larger of the following two schemes.
- Homework 20%, the first midterm 20%, the second midterm 20%, and the final 40%.
- Homework 20%, the largest midterm grade 30%, and the final 50%.
- The total grade for the semester will be curved.
- You must take the final exam to pass the course.

Advice on succeeding in a math class:

- Read the relevant material in a textbook or other supplementary material.
- When reading mathematics, use a pencil and paper to sketch the calculations that are performed by the author.
- Come to class with questions, so you can get more out of the lecture.

- If you are having difficulty with the material or a particular homework problem, come to office hours.

1. TENTATIVE CALENDAR

Holidays and breaks in boxes midterms in **bold**.

Week	Dates	Material
Week 1	January 9,11,13	Probability Review
Week 2	January 16 ,18, 20	5.3
Week 3	January 23,25,27	7.3 8.1-8.3
Week 4	January 30, February 1,3	8.4-8.6
Week 5	February 6,8,10	8.7 9.1-9.3
Week 6	February 13,15, 17	9.4, 9.5,9.6
Week 7	February 20 , 22 ,24	Midterm 1, 10.6
Week 8	February 27, March, 1, 3	11.2-11.4
Week 9	March 6,8,10	12.2.1, 12.2.2, 12.2.3, 12.3
Week 10	March 13 , 15 , 17	Spring Recess
Week 11	March 20,22,24	12.3,13.2-13.4
Week 12	March 27,29, 31	13.5-13.6 Midterm 2
Week 13	April 3,5,7	14.2
Week 14	April 10,12,14	14.3-14.5
Week 15	April 17,19,21	14.6, Causal networks
Week 16	April 24,26,28	Review of course