

MAT 652 : Probability and Statistics II (Spring, 2019)

Course Description

The course will cover the central ideas of statistical inference: estimation (point and interval) and hypothesis testing. We learn how to find appropriate statistical techniques and how to evaluate these techniques in a general context first, and then consider some special cases. We plan to cover Chapters 5 to 9 in the textbook.

Topics to be covered

Order Statistics, Convergence Concepts, Sufficiency and Completeness, MOM, MLE, MSE, Best Unbiased Estimators, LRT, Errors and Power in Hypothesis Testing, Interval Estimations, Constructing and Evaluating Confidence Intervals.

Instructor

Professor Pinyuen Chen

Office: Carnegie Building 316B, 443-1577, 443-1471(message), pinchen@syr.edu

Class time MW 3:45 pm – 5:05 pm

Office Hours: Mondays, Tuesdays, Wednesdays 1 pm – 2 pm and by appointments.

Textbook

Statistical Inference, by George Casella and Roger L. Berger, 2nd edition, Duxbury

Grading Policy

Two Exams Dates to be announced.	50%
Final Exam on May 7 Tuesday 5:15 – 7:15 pm.	30%
Homework	20%

Prerequisite

Calculus III, and MAT 651 or equivalent.

References

- Bickel and Doksum (2001) *Mathematical Statistics*, Vol. 1, 2nd edition, Prentice Hall
- Cox and Hinkley (1974) *Theoretical Statistics*, Chapman and Hall
- E.L.Lehmann (1983) *Theory of Point Estimation*, Wiley
- E.L.Lehmann (1988) *Testing Statistical Hypothesis*, Wiley
- Dudewicz and Mishra (1988) *Modern Mathematical Statistics*, Wiley

Students with disabilities. If you believe that you need academic adjustments (accommodations) for a disability, please contact the Office of Disability Services (ODS), <http://disabilityservices.syr.edu>, located in Room 309 of 804 University Avenue, or call (315) 443-4498 or TDD: (315) 443-1371 for an appointment to discuss your needs and the process for requesting academic adjustments. ODS is responsible for coordinating disability-related academic adjustments and will issue students with documented Disabilities Accommodation Authorization Letters, as appropriate. Since academic adjustments may require early planning and generally are not provided retroactively, please contact ODS as soon as possible.

Related link: <http://disabilityservices.syr.edu/faculty-staff/syllabus-statement/>

Academic Integrity: Syracuse University's Academic Integrity Policy reflects the high value that we, as a university community, place on honesty in academic work. The policy defines our expectations for academic honesty and holds students accountable for the integrity of all work they submit. Students should understand that it is their responsibility to learn about course-specific expectations, as well as about university-wide academic integrity expectations. The policy governs appropriate citation and use of sources, the integrity of work submitted in exams and assignments, and the veracity of signatures on attendance sheets and other verification of participation in class activities. The policy also prohibits students from submitting the same work in more than one class without receiving written authorization in advance from both instructors. Under the policy, students found in violation are subject to grade sanctions determined by the course instructor and non-grade sanctions determined by the School or College where the course is offered as described in the Violation and Sanction Classification Rubric. SU students are required to read an online summary of the University's academic integrity expectations and provide an electronic signature agreeing to abide by them twice a year during pre-term check-in on MySlice.

The Violation and Sanction Classification Rubric establishes recommended guidelines for the determination of grade penalties by faculty and instructors, while also giving them discretion to select the grade penalty they believe most suitable, including course failure, regardless of violation level. Any established violation in this course may result in course failure regardless of violation level. For more information and the complete policy, see <http://class.syr.edu/academic-integrity/>

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Learning Goals. Students are expected to master the basic ideas of probability and to acquire the skills needed for the application of these ideas to the further study of probability and/or statistics.

Cell Phones. Cell phones should be turned off and put away during class. Calculators on cell phones may not to be used on tests.