

STAT 611: Theory of Statistics II, Section 600, Spring 2018

Instructor: James Long

Lectures: M/W/F 1:50 - 2:40, 113 Blocker

Course Description: (from catalog) Theory of estimation and hypothesis testing; point estimation, interval estimation, sufficient statistics, decision theory, most powerful tests, likelihood ratio tests, chi-square tests.

Learning Outcomes: At the end of this course students will be able to:

1. Summarize data using the principle of sufficiency.
2. Estimate parameters in models using the method of moments, maximum likelihood, and Bayes theorem. Understand when these procedures will and will not work.
3. Quantify uncertainty in estimation using loss functions, Fisher information, and posterior distributions.
4. Construct optimal hypothesis testing and interval estimation procedures.
5. Evaluate the asymptotic (large sample) performance of estimators.

Prerequisites: STAT 610. Chapters 1–5 of course textbook. Contact me if you have questions about your background preparation for the course.

Textbook: Casella, G. and Berger, R.L. (2002) Statistical Inference (second edition). Duxbury: Thomson Learning. Required. STAT 610 covers chapters 1–5. STAT 611 covers chapters 6–10.

Instructor Office Hours: TBA

Instructor email: jlong@stat.tamu.edu

Office Hours versus Email: Questions about course material should be addressed during office hours. Please use email only for administrative issues.

TA: TBA

Grading Policy: You will receive a percent correct (0-100) on the homeworks and exams. These percentages are weighted:

$$20\% \text{ homework} + 25\% \text{ midterm 1} + 25\% \text{ midterm 2} + 30\% \text{ final}$$

The result of this weighting is the percent performance (PP). This is converted to letter grades as follows:

- $90\% \leq \text{PP} \leq 100\% \rightarrow \text{A}$
- $80\% \leq \text{PP} < 90\% \rightarrow \text{B}$
- $70\% \leq \text{PP} < 80\% \rightarrow \text{C}$
- $60\% \leq \text{PP} < 70\% \rightarrow \text{D}$

- $0\% \leq PP < 60\% \rightarrow F$

Homework: Questions mostly from textbook. Solutions turned in at the beginning of class. About one problem set per week. Students are encouraged to work together, but the answers must be your own. No late homework accepted.

eCampus: Homework assignments and important course information will be posted on eCampus <http://ecampus.tamu.edu/> and my website <http://www.stat.tamu.edu/~jlong>.

Important Dates:

- Midterm 1: TBA (during class)
- Midterm 2: TBA (during class)
- Final: Monday, May 7, 3:30 pm – 5:30 pm (set by university)

Absence: Only university excused absences will be accepted for missing homework or exams. Documentation will be required. If you know you will miss an exam for a valid reason, please see or email me as soon as possible. See <http://student-rules.tamu.edu/rule07> for what constitutes a university excused absence.

Americans with Disabilities Act (ADA) Policy Statement: The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, currently located in the Disability Services building at 701 West Campus Blvd. You can call 979-845-1637 or visit <http://disability.tamu.edu>.

Copyright Notice: The handouts used in this course are copyrighted. By “handouts” I mean all materials generated for this class, which include but are not limited to syllabi, quizzes, exams, lab problems, in-class materials, review sheets, and additional problem sets. Because these materials are copyrighted, you do not have the right to copy the handouts, unless I expressly grant permission.

Statement on Plagerism: As commonly defined, plagiarism consists of passing off as ones own ideas, words, writing, etc., which belong to another. In accordance with this definition, you are committing plagiarism if you copy the work of another person and turn it in as your own, even if you should have the permission of that person. Plagiarism is one of the worst academic sins, for the plagiarist destroys the trust among colleagues without which research cannot be safely communicated. If you have any questions regarding plagiarism, please consult the latest issue of the Texas A&M University Student Rules, under the section “Scholastic Dishonesty.”

Aggie Honor Code: “An Aggie does not lie, cheat or steal, or tolerate those who do.” Please refer to the Honor Council Rules and Procedures (<http://aggiehonor.tamu.edu/>) for more information on the honor code.