

Statistics 6303: Experimental Statistics 1
Spring 2018

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Class Hours: T/Th 9:30 – 11:00 in Hyer Hall 0111
Office Hours: Tuesday @ 11:00 am, Thursday @ 2pm
Course Text: Ramsey, Fred L. *The Statistical Sleuth Third Edition*. Duxbury Publications.
Pre-requisites: 6301 and its prerequisites

TA: Lei Shi

Before taking this class:

- You should be familiar with chapters 1-9 in *The Statistical Sleuth*
- If you have serious deficiencies in the material mentioned above, you must address these yourself on your own outside of class as soon as possible.

Learning Objectives: The student will

- Gain a better understanding of basic statistical methods covered in introductory statistics courses and problems that arise when these analytic methods are applied to real-life research problems.
- Demonstrate understanding of the advantages and disadvantages of a given experimental design, particularly with respect to the type of conclusions that can be made.
- Appropriately apply the methods discussed in the course to numerical data
- Communicate the findings of a statistical analysis in a clear, concise, and scientific manner

Course Coverage

We will cover multiple regression, multi-way ANOVA, categorical data, mixed effects, and then additional topics depending on time and interest.

Grading: HW (40%), Midterm (20%), Final/Project (20%), Quizzes/Attendance (20%).

HW: This includes homework from the book and computer assignments. This will afford you the opportunity to gain additional experience with the statistical and computational aspects of the class. Your lowest assignment will be dropped. Any assignment turned in between 0 hours and 24 hours late will have 30 percentage points deducted. After 24 hours, late assignments will be assigned a 0, though they will be accepted for grading if feedback is desired. All assignments should be submitted through canvas and be computer generated (no scanned pencil/paper).

Mid-Term: There will be 1 exam, scheduled later in the semester (roughly half way). Details to follow.

Quizzes/Attendance: There won't be explicit attendance taken, but we will have periodic, short quizzes throughout the semester. Some will be announced, others will not be. No make-ups will be arranged.

Final/Project: The project will include being given a dataset and producing a presentation on your findings. More details will be provided as the semester proceeds.

Best Practices for Success in STAT 6301

Attendance. Attendance is mandatory.

Software. This class will use SAS as the main computational workhorse. SAS is an industry standard in several areas and is even legislated by law to be used in the analysis clinical. Here is a tutorial that can be used to get up to speed on SAS syntax and philosophy.

<http://support.sas.com/training/tutorial/>

Integrity. A lot of the graded work occurs outside of class, so I expect honesty and integrity in what you submit for evaluation. Evidence of academic dishonesty will minimally result in zeros for all involved parties, and perhaps University level disciplinary action. Don't risk your academic career.

Organization. Don't procrastinate! Count on your computer failing the night before a due date. Start early and give yourself a chance to succeed.

A Suggested Strategy for Success

Getting Help: If questions arise while doing assignments/exams, you must resolve these questions before the assignment is due by asking questions in class, collaborating other students (see below), or by discussing the problem with me in person or via email. **I encourage and expect you to seek out help.**

Collaboration: I encourage you to form study groups and collaborate with your fellow students in tackling the assignments. Working together in groups on homework is fine. **However, every student should write-up and complete his or her homework independently.** Talking about problems with other people does help in learning, but just copying the solutions from one another does not.

Looks do matter! All assignments must be NEATLY executed and organized. You risk a zero on any assignment submitted in a sloppy manner. See submission guidelines for more detail.

Submission guidelines for HW assignments

- Submit solutions in problem order.
- Edit the assignment source document (if provided) by writing in your solutions under the statement of each question.
- If you use MS Word to provide your results, use an easy to read variable-width font (I like Ariel, Helvetica, and Geneva fonts – this document is written in Helvetica 11 point) with a minimum of 11 point font.
- Relevant SAS code and output from the SAS console must be included in-line at the appropriate point using Courier New (or other fixed width) font, in 10 point size. **Inclusion of irrelevant code or output may be penalized.**
- Any graphics from SAS must be electronically cut-and-pasted in-line at the appropriate point of the write-up. You can use Word to resize the graphics appropriately.
- Any mathematical notation must be provided with appropriate use of subscripts, superscripts and symbols. Use MS Equation or another equation editor

From The Provost (i.e. University Policies over which I have little control)

Disability Accommodations: Students needing academic accommodations for a disability must first register with Disability Accommodations & Success Strategies (DASS). Students can call 214-768-1470 or visit <http://www.smu.edu/Provost/ALEC/DASS> to begin the process. Once registered, students should then schedule an appointment with the professor as early in the semester as possible, present a DASS Accommodation Letter, and make appropriate arrangements. Please note that accommodations are not retroactive and require advance notice to implement.

- **Religious Observance:** Religiously observant students wishing to be absent on holidays that require missing class should notify their professors in writing at the beginning of the semester, and should discuss with them, in advance, acceptable ways of making up any work missed because of the absence. (See University Policy No. 1.9.)
- **Excused Absences for University Extracurricular Activities:** Students participating in an officially sanctioned, scheduled University extracurricular activity should be given the opportunity to make up class assignments or other graded assignments missed as a result of their participation. It is the responsibility of the student to make arrangements with the instructor prior to any missed scheduled examination or other missed assignment for making up the work. (University Undergraduate Catalogue)
- **Student Learning Outcomes:** Please include in your syllabi all student learning outcomes, both those specific to your course, as well as those that satisfy major and general education requirements.
- **Final Exams:** Final course examinations shall be given in all courses where they are appropriate, and some form of final assessment is essential. Final exams or final assessments must be administered as specified in the official examination schedule, and shall not be administered during the last week of classes or during the Reading Period. Please state clearly in the syllabus the date/time and form of the final exam or assessment.

Incompletes will only be given in the case of extraordinary circumstances that prevent you from finishing the semester. You must have completed at least 50% of the course with a passing grade to be eligible for an incomplete.