Syllabus
Statistics 408 / 608 Sections 500, 600, 700, Spring 2017
Tuesday, Thursday 9:35-10:50am Blocker 457
Optional Homework Discussion: Wednesday 5-6 pm online

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Office Hours: Tuesday, Thursday 8:30-9:15, 12:00-12:30, most Fridays (see eCampus)

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Materials: Textbook and software:

- Software: SAS, R, or STATA. You are welcome to use whatever statistical package works best for the problem at hand. I would encourage you to use either SAS or R, whichever you are least familiar with if you are a statistics major. R installs on Windows, Linux, and Mac computers. SAS now has an academic version which will install in Macs, but it was originally written for Windows. STATA code for the examples in the textbook is also provided at the website below; I just won’t be able to help you when things go wrong.

Learning Objectives: By the end of the semester, the student should be able to:

- Identify appropriate graphs, summary statistics, models, and inferential statistics for various contexts
- Interpret graphs, statistics, and models in various contexts
- Calculate summary and inferential statistics
- Compare and contrast various models
- Create appropriate models for various contexts
- Infer appropriate conclusions about populations based on data
- Explain and compare properties of summary and inferential statistics and models
- Combine concepts in new ways to solve different problem
Important Websites: We will use the following websites throughout the course:
A discussion board, grades, and notes will be posted here:
ecampus.tamu.edu
SAS, STATA, and R code for the textbook examples can be found here:
www.stat.tamu.edu/˜sheather/book/
Homework will be posted on WebAssign:
www.webassign.com
See eCampus for WebAssign login information.

Prerequisite: Three semesters of calculus, linear algebra, some experience with programming, and a course in inferential statistics (212, 641, or 651) are prerequisites for this course. Classes like 630, 610, or 414 are not appropriate prerequisites. A basic understanding of Windows and MSWord and Excel will be helpful. Using our websites often requires the latest version of the internet browser Firefox, along with updated versions of Java and other such programs. You should know how to update software on your computer. However, please don’t update to the latest version of Windows, SAS, or R in the middle of the semester until I give you the okay - check eCampus.

Topics: We will cover the following topics:
1. Introduction to Design Matrices
2. Simple Linear Regression
3. Diagnostics and Transformations for Simple Linear Regression
4. Weighted Least Squares
5. Multiple Linear Regression
6. Diagnostics and Transformations for Multiple Linear Regression
7. Variable Selection
8. Logistic Regression
9. Serially Correlated Errors

Exams: We will have two exams and a final. Exam 1 is scheduled for Thursday, March 2. Exam 2 is scheduled for Thursday, April 6. The Final Exam is scheduled for Thursday, May 4 12:30-2:30pm. Online students will usually take the midterm exams during the 24-hour window beginning one hour after the in-class exam begins, lasting for 24 hours. Online students will take the final exam during the 24 hour window that is Thursday, May 4.

Grading: The grading scale is as follows:
Homework 15%
Exams 25% each - 2 exams
Final Exam 35%

You will NOT be allowed any extra credit projects to compensate for a poor average. Everyone must be given the same opportunity to do well in this class. The final grade is based on a scale no stricter than 90-100: A, 80-89: B, 70-79: C 60-69: D, below 60: F.
Incompletes: A temporary grade of I (Incomplete) at the end of the semester indicates that the student has completed the course with the exception of a major quiz, final exam, OR minimal other work. The instructor shall give this grade only when the deficiency is due to an authorized absence or other cause beyond the control of the student.

Homework: Homework is required so that you get a better understanding of the material covered, plus it will help you to keep up. Each homework is worth the same percentage of your grade, regardless of the number of "points" it is worth. It is strongly encouraged that you work with another student. You will get a better understanding of the material if you discuss it with someone. You must submit your own work, however (see the section on Scholastic Dishonesty below).

No late homework will be accepted, nor will you be allowed to make up missed homework. Solutions are posted immediately on the due date. To compensate for university excused absences, the lowest homework assignment score will be dropped. If you start the course late, it will be a missed homework. If your computer doesn’t work or the system is down for the last 3 hours before it’s due, it will be a missed or partial homework. If you have extenuating circumstances that require a different plan, please contact me.

University Policies: Academic regulations and procedures are governed by University policy. Academic dishonesty cases will be handled in accordance the University’s policies.

Aggie Honor System: An Aggie does not lie, cheat, steal, or tolerate those who do. Academic dishonesty includes the commission of any of the following acts: cheating, fabrication / falsification, multiple submissions, plagiarism, complicity, and other types of misconduct. Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning, and to follow the philosophy and rules of the Honor System. Students may be required to state their commitment on examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the TAMU community from the requirements or the processes of the Honor System. Please see [http://aggiehonor.tamu.edu](http://aggiehonor.tamu.edu) for the complete Honor Council Rules and Procedures.

- Cheating is intentionally using or attempting to use unauthorized materials, information, notes, study aids or other devices or materials in any academic exercise. Unauthorized materials may include anything or anyone that gives a student assistance and has not been specifically approved in advance by the instructor. During an examination, for example, looking at another student’s examination or having a conversation with others is cheating unless specifically allowed in advance by the instructor.

- Fabrication is making up data or results, and recording or reporting them; or submitting fabricated documents. Falsification is manipulating research materials, equipment, or processes, or changing or omitting data or results such that the research is not accurately represented in the research record. The intentional invention and unauthorized alteration of any information or citation in any academic exercise; failing to acknowledge the actual source from which cited information was obtained; changing information on tests, quizzes, examinations, reports, or any other material that has
been graded and resubmitting it as original for the purpose of improving the grade on that material are examples of fabrication and falsification.

- Plagiarism consists of passing off as one’s 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.”

- Complicity is intentionally or knowingly helping, or attempting to help, another to commit an act of academic dishonesty. Examples include knowingly allowing another to copy from ones paper during an examination or test; distributing test questions or substantive information about the test without the instructors permission; collaborating on academic work knowing that the collaboration will not be reported; taking an examination or test for another student; and conspiring or agreeing with one or more persons to commit, or attempt to commit, any act of scholastic dishonesty. For more information about University policies and regulations, please see the following:
  - Academic Integrity and Student Rules: [http://student-rules.tamu.edu](http://student-rules.tamu.edu)
  - Aggie Core Values: [http://www.tamu.edu/about/coreValues.html](http://www.tamu.edu/about/coreValues.html)

**Statement on Disabilities:** 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 the Student Services at White Creek complex on west campus or call 979-845-1637. For additional information visit [http://disability.tamu.edu](http://disability.tamu.edu).

If you have a disability requiring an accommodation, please contact me as soon as possible so that we can make appropriate arrangements.

**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.