M 358K (Unique 53480) - Applied Statistics

Instructor: Tom Struppeck [struppeck@math.utexas.edu](mailto:struppeck@math.utexas.edu)

Class Meets: MWF 1:00-2:00 p.m. in RLM 6.104

Office Hours: MWF 10:00-10:50 a.m. in RLM 13.146 No office hours on days of tests.

Prerequisite: M 362K with a grade of at least a C

Text: De Veaux/Velleman/Bock: *STATS Data and Models*, 3rd edition, Pearson, 2012

Testing: Three tests during class times and a comprehensive final exam.

Projects: These are special assignment that typically will involve using a computer.

Homework and Quizzes: You are strongly urged to read the scheduled chapter in the textbook before class.

Late papers (homework and projects) cannot be accepted.

Grading: Your grade for this class is determined by your two best out of three test scores (25% each), your project score (15% total), comprehensive final exam (25%), and your homework/quiz grade (10%).

**Grading Scale**:  A:  90-100;       B:  80-89;        C:  70-79;          D:  60-69;         F:  below 60  
  
I may, at my sole discretion, adjust those ranges slightly downwards depending on circumstances.

Course Description: This class is a practical introduction to statistics. The class is structured around the project assignments. The project assignments will give you the opportunity to apply the statistical methods and techniques that we will learn to actual data.

This is **not** a mathematical statistics class; if you need such a class, you should take M378K.

Flagged Course: This course carries the Quantitative Reasoning flag. Quantitative Reasoning courses are designed to equip you with skills that are necessary for understanding the types of quantitative arguments you will regularly encounter in your adult and professional life. You should therefore expect a substantial portion of your grade to come from your use of quantitative skills to analyze real-world problems.

Syllabus: We will cover most of the textbook.

Academic Dishonesty: The University has (appropriately) a very strict academic dishonesty. Any apparent violations of the University’s academic dishonesty policy will be referred to the Dean’s Office.

Academic Accommodations: Should you need an accommodation, please come see me privately.

"The University of Austin provides upon request appropriate academic accommodations for qualified students with disabilities. For more information, contact the Office of the Dean of Students at 471-6259,

471-6441 TTY."

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| **Date** | **Topic (Tentative Schedule)** | **READINGS** |
| W 8/26 | Class Overview/Chapter 1 | Chapter 1 |
| F 8/28 | Data | Chapter 2 |
| M 8/31 | Categorical Data | Chapter 3 |
| W 9/2 | Quantitative Data | Chapter 4 |
| F 9/4 | Distributions | Chapter 5 |
| W 9/9 | Standard Deviation | Chapter 6 |
| F 9/11 | Scatterplots | Chapter 7 |
| M 9/14 | Linear Regression | Chapter 8 |
| W 9/16 | More about linear regression | Chapter 9 |
| F 9/18 | Re-expressing Data | Chapter 10 |
| M 9/21 | Understanding Randomness | Chapter 11 |
| W 9/23 | Sample Surveys | Chapter 12 |
| F 9/25 | Experiments and Observational Studies | Chapter 13 |
| M 9/28 | Catch-up |  |
| W 9/30 | Review for test 1 |  |
| F 10/2 | **Test 1 – Chapters 1-13** |  |
| M 10/5 | From Randomness to Probability | Chapter 14 |
| W 10/7 | Probability Rules | Chapter 15 |
| F 10/9 | Random Variables | Chapter 16 |
| M 10/12 | Probability Models | Chapter 17 |
| W 10/14 | Sampling Distribution Models | Chapter 18 |
| F 10/16 | Confidence Intervals for Proportions | Chapter 19 |
| M 10/19 | Testing Hypotheses about Proportions | Chapter 20 |
| W 10/21 | Testing Hypotheses about Proportions | Chapter 20 |
| F 10/23 | More About Tests and Intervals | Chapter 21 |
| M 10/26 | Comparing Two Proportions | Chapter 22 |
| W 10/28 | Review for Test 2 and catch-up |  |
| F 10/30 | **Test 2 – Chapters 14-22** |  |
| M 11/2 | Inferences about Means | Chapter 23 |
| W 11/4 | Comparing Means | Chapter 24 |
| F 11/6 | Paired Samples and Blocks | Chapter 25 |
| M 11/9 | Comparing Counts | Chapter 26 |
| W 11/11 | Comparing Counts | Chapter 26 |
| F 11/13 | Inferences for (Simple Linear) Regression | Chapter 27 |
| M 11/16 | Inferences for (Simple Linear) Regression | Chapter 27 |
| W 11/18 | Review for Test 3 and catch-up |  |
| F 11/20 | **Test 3 – Chapters 23-27** |  |
| M 11/23 | Analysis of Variance | Chapter 28 |
| W 11/25 | Multifactor Analysis of Variance | Chapter 29 |
| F 11/27 | THANKSGIVING BREAK |  |
| M 11/30 | Multiple Regression | Chapter 30 |
| W 12/2 | Multiple regression Wisdom | Chapter 31 |
| F 12/4 | Final Review / Last day of class |  |
|  | **Final Exam TBA** |  |

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**Emergency Evacuation Policy**

Every member of the university community shall be familiar with the

Emergency Evacuation Policy and understand his or her role in these

emergency situations.

In the event of a fire or other emergency, it may be necessary to

evacuate a building rapidly. Upon the activation of a fire alarm or

the announcement of an emergency in a university building, all

occupants of the building are required to evacuate and assemble

outside. Once evacuated, no one may re-enter the building without

instruction to do so from the Austin Fire Department, University of

Texas at Austin Police Department, or Fire Prevention Services office.

University faculty members are responsible for pointing out their

classrooms' building emergency evacuation routes and emergency

procedures to students at the beginning of each semester.

Furthermore, faculty, staff, and students should familiarize

themselves with all the exit doors of each room and building they

occupy at the university, and should remember that the nearest exit

routes may not be the same as the way they typically enter buildings.

Students requiring assistance in evacuation shall inform their

instructors in writing during the first week of class. Faculty

members must then provide this information to the Fire Prevention

Services office by fax (512-232-2759), with "Attn. Mr. Roosevelt

Easley" written in the subject line.

Faculty members should be prepared to give appropriate instructions

in the event of an evacuation. Students should follow the

instructions of faculty members and class instructors during

emergency evacuations.

We can most effectively prepare for and cope with emergencies by

working together. Thus, everyone has a duty to ensure other

occupants of university buildings are aware of emergencies, and to

aid anyone requiring assistance in evacuation. People should only

provide this aid to the best of their abilities, however, and no one

is expected to endanger themselves in order to assist with the

evacuation of others.

Information regarding emergency evacuation routes and emergency

procedures can be found

at <<http://www.utexas.edu/emergency>>www.utexas.edu/emergency.

Classroom Instruction and Recommended Syllabus Information

To implement this policy and reinforce building evacuation

procedures, each faculty member shall provide the following

information and instructions to students:

Occupants of buildings on The University of Texas at Austin campus

are required to evacuate buildings when a fire alarm is activated.

Alarm activation or announcement requires exiting and assembling

outside.

Familiarize yourself with all exit doors of each classroom and

building you may occupy. Remember that the nearest exit door may not

be the one you used when entering the building.

Students requiring assistance in evacuation shall inform their

instructor in writing during the first week of class.

In the event of an evacuation, follow the instruction of faculty or

class instructors.

Do not re-enter a building unless given instructions by the

following: Austin Fire Department, The University of Texas at Austin

Police Department, or Fire Prevention Services office.

Behavior Concerns Advice Line

BCAL: 232-5050