STA 200 - Statistics: A Force on Human Judgment
Fall Session for 2007
Course Information

Instructor: Professor Bill Rayens
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Office Hours: R: 1:00-2:00; virtual, TBA
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Textbook: Statistics - Concepts and Controversies, 6th Edition, by Moore and Notz

Right Up Front

- We are a big class, 165 strong. Still you need to come to class and you must not create any kind of disruption. We can't make the class personal, but we will make it relevant!

- Come to class prepared. Read the material in advance. Your survival in the class may depend on it. If you don't catch on early, this course will seem vague and unrelated.

- This class isn't a traditional "math" course. Don't expect it to be. STA 200 involves much more ambiguity, discussion, and broad thinking. This is an "ideas" course, with as much emphasis on understanding logic and concepts as on calculations. Please see the learning objectives below.

- Our course is facilitated through **Blackboard** (**Bb**) and you ***must*** become comfortable with Bb. The first recitation is designed to help you with this. You should expect to check Blackboard *daily* for announcements.

- Attendance is expected at all times.

Learning Objectives

For most of you this will be the only statistics class you will take at the University of Kentucky. Some of you have a substantial math background, but most of you don't. What you all have in common is that you will need to understand enough statistical science to function effectively in your everyday life as a college-educated adult. This involves a tricky mixture of skills. Some of these skills can be most easily demonstrated with computations, calculations, and algebraic reasoning, while others will require the networking of ideas and the association of diverse concepts in order to achieve a twenty-first century perspective on the nature of this pervasive, inferential science. Thus our intent is that upon successful completion of this course a student should be able to:

- **Demonstrate task-based skills** including: act of unbiased sampling; computation of common descriptive measures; computation of normal probabilities; calculation of confidence intervals; testing of one-parameter hypotheses; and calculation of associated p-values.

- **Demonstrate conceptual skills** including: description of bias, variability, and accuracy associated with statistical sampling; design of simple experiments; choice of appropriate descriptive measures, depending on measurement level, distribution shape; interpretation of confidence intervals; role of sampling distributions and normal curves in inference; nature of risk addressed by simple hypothesis testing and the sense in which p-values quantify that risk; interpretation and limitations of statistical significance; and the sense in which correlation measures linear association, but does not address causation.

Grading

Your grades in this course will come from the following sources:

- Skills Drills 30%
- Recitations 10%
- Practice Exams 10%
- Midterm 25%
- Cumulative Final 25%

The only way to effectively facilitate a large lecture is to have clear rules, insist on shared responsibility and be consistently unwavering with policies. So please, understand NOW that **we cannot and will not give make-ups** other than those allowed by the University. No exceptions, so please don't ask. If you have a University excuse it must explicitly cover the dates of the missed activities to be valid. Make a copy of the excuse for us to keep on file.

Skills Drills – 30%

These assignments will mostly be sets of multiple choice problems that will appear on our Blackboard (Bb) site. For these in particular, you will have two attempts at each, and your work will be automatically graded, recorded, and immediate feedback received.

However, you may also be assigned other Skills Drills, including but not limited to in-class questions, short projects, web-based activities, etc. Make sure you watch the Bb site and pay attention in class so you'll know when these assignments are made and when they are due.

Recitations – 10%

The recitations will feature discovery exercises and TA-led discussions designed to allow you to practice skills or to create tangible encounters with difficult concepts. You will receive a 1 if you show up and participate. Otherwise you will get a 0.

Practice Exams – 10%

These are designed to get you ready for the tests. There will be a total of three (3) during the course of the term. The first two are open book, open notes, activities that you will do on our course Bb site on your own time. The third is an individual exam, administered during the Thursday before Dead Week; it is closed notes and closed books. Details will be provided as the times approach. The first two will each make up 2.5% of the course grade, for a total of 5%, while the third, a short 15 question cumulative assessment, will count 5%.

Midterm and Final – 25% each

These are individual activities. The dates of the tests are on the attached sheet. The cumulative final exam will be held during the regular final exam block. It will be a *fully* cumulative exam.

How is my final course grade calculated?
At the end of the term the following fractions are calculated and added together to produce a number between 0 and 100.

1. $\frac{\text{Skills Drills Points Earned}}{\text{Total Skills Drills Points Possible}} \times 100\% \times (0.30)$
2. $\frac{\text{Recitation Points Earned}}{\text{Total Recitation Points Possible}} \times 100\% \times (0.10)$
3. $\frac{\text{Points Earned on First Practice Exam}}{\text{Total Points Possible on First Practice Exam}} \times 100\% \times (.025)$
4. $\frac{\text{Points Earned on Second Practice Exam}}{\text{Total Points Possible on Second Practice Exam}} \times 100\% \times (.025)$
5. $\frac{\text{Points Earned on Third Practice Exam}}{\text{Total Points Possible on Third Practice Exam}} \times 100\% \times (.050)$
6. $\frac{\text{Points Earned on Midterm Exam}}{\text{Total Points Possible on Midterm Exam}} \times 100\% \times (.25)$
7. $\frac{\text{Points Earned on Final Exam}}{\text{Total Points Possible on Final Exam}} \times 100\% \times (.25)$

The sum of these seven items will then be used according to the following standard scale to determine the course letter grade:

- 90 or above A
- 80 to 89 B
- 70 to 79 C
- 60 to 69 D
- 59 or below E

Please be advised that midterm grades will be reported and at-risk students will be identified.

Attendance

- Lectures: There is some debate about whether it makes sense to *require* attendance but not *record* it. Our position is that attendance is required, regardless. The lectures are important and you should be there.

- Exams: Attendance at exams is a specific course requirement. Make-up exams will only be offered in the case of an "excused" absence. Excused absences are defined by the University of Kentucky Bulletin--you should consult the Bulletin for a description of what is an excused absence. An excused absence from an exam must be verified by presenting documentation to me. If you know before the excused absence is to occur that you will be absent, then present documentation to me ahead of time. Unexcused absences are any cases of absence that do not meet the University's definition. An unexcused absence from a lecture exam will result in a grade of zero (0) for that particular exam.

- Recitations: Attendance at recitations is a specific course requirement. A make-up for a recitation activity will only be offered in the case of an "excused" absence. (See above for definitions of “excused” and “unexcused” absences.) If you know before the excused absence is to occur that you will be absent, then present documentation to your TA ahead of time. Please understand, each recitation grade is a 0 or 1, depending on whether you came to recitation and participated. This is very valuable insurance and you would be well advised to take advantage of it.

Make-Up Policies

In the event of an excused absence from an exam, recitation, or in-class assignment you have the right to make up the work. The following conditions apply to making up the work due to an excused absence.

- For a missed exam in lecture OR recitation, you must present documentation of the absence to Dr. Rayens no later than the first lecture after the time period for which you are excused and be prepared to take the make-up exam within 3 school days after the time period for which you are excused. Dates on excuse must match the interval of time you are absent.

- For a missed recitation (assuming there was no practice exam given), you must present documentation of the absence to your TA no later than the first recitation after the time period for which you are excused. You are to then complete the activity that your group did in your absence and email your results to your TA. If for some reason no activity was assigned during a missed recitation contact your TA for further instruction. You must complete the missed material within 5 school days after the time period for which you are excused.

- For a missed Skills Drills assignment, on-line or in-class, you must present documentation of the absence to your TA no later than the first lecture or recitation after the time period for which you are excused. You will then be asked to complete activity in a manner set by your TA, after consultation with your instructor. You must complete the missed assignment within 2 school days of presenting your excuse to your TA.

Failure to make up missed assignments, that are exused, by following the conditions specified above will result in a grade of zero (0).

The excuse presented **MUST** include the actual dates for which you were absent.

Tentative Schedule of Events – Subject to Revision Depending on Semester Circumstances		
August	**23**	Classes Begin – Introduction
	27/28	Recitation 1 – Accessing Course Materials on Blackboard
	28	Chapter 1
	30	Chapter 2
September	**3/4**	No Recitation - Labor Day
	4	Chapter 2
	6	Chapter 3
	10/11	Recitation 2 – Discovering Sampling Variability
	11	Chapter 4
	13	Chapter 4
	17/18	Recitation 3 – Discovering Margin of Error
	18	Chapter 5
	20	Chapter 5
	24/25	Recitation 4 – Encountering Experimental Design
	25	Chapter 6
	27	Chapter 7
October	**1/2**	Recitation 5 – Encountering Measurement Subtleties
	2	Chapter 8
	4	Chapter 9 Practice Test I becomes available on line
	8/9	Recitation 6 – Go over Practice Test I
	9	Chapter 12
	11	Test I – Covers Chapters 1-9
	15/16	Recitation 7 – Go over Test I
	16	No formal class. Dr. Rayens at conference. TAs available in classroom for questions.
	18	Chapter 12
	22/23	Recitation 8 – Connecting “How Likely” to Geometric Area
	23	Chapter 13
	25	Chapter 13
	29/30	Recitation 9 – Practicing What We’ve Learned
	30	Chapter 13
November	**1**	Chapter 22
	5/6	Recitation 10 – Discovering Significant Testing
	6	Chapter 22
	8	Chapter 22
	12/13	Recitation 11 – Rediscovering Confidence Intervals
	13	Chapter 21
	15	Chapter 21 Practice Test II becomes available on line
	19/20	Recitation 12 – Go over Practice Test II
	20	Chapter 14
	21-24	**Thanksgiving Holiday**
	26/27	Recitation 13 – Encountering Correlation Subtleties
	27	Chapter 14
	29	Practice Test III – Short Cumulative Assessment
December	**3/4**	Recitation 14 – Go over Practice Test III
	4	Chapter 15
	6	Chapter 15
FINAL EXAM	**11**	Final Exam