

Syllabus for Quantitative Methods

Summer 2011

Psychology 200: B1

MTWTH 1:50 – 4:30 pm LCB 102

May 31 – July 8, 2011

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Office: 227 Tillett Hall, Livingston Campus

Office hours: Tuesday AND Wednesday afternoons, 4:45 am – 5:45 am (Walk-in hours); AND AT OTHER TIMES by appointment

Read THIS syllabus all the way to the end. It contains important information. On the first day of class, please ask questions about anything you do not understand. Your continued enrollment in the course implies your understanding and acceptance of the information in this syllabus. **IGNORE THE SYLLABUS IN THE BOOK.**

We will take a 10 minute break at about 3:00 (bring a snack, little is open on the Livingston campus)

Required Text: Karlin, Behavioral Statistics in Simple English, 5th Edition
Available at New Jersey Books on Easton Avenue in New Brunswick, and at Livingston Bookstore, and online .

Required Clicker: TurningPoint RF response device

A **calculator** is also required for the course. A \$10 - \$20 calculator will be sufficient. It needs to be able to take square numbers and to take square roots, nothing fancier.

Bring your calculator and plenty of paper, to every class you will be doing calculations in class.

If you are afraid of statistics: Before the course begins, read Larry Gornick's and Woollcott Smith's The Cartoon Guide to Statistics. There are a few minor errors in the book. Extra credit points for every error you find.

Objectives of the course:

1. Students will learn how to use concepts of probability and statistics to think about issues and to make decisions.
2. Students will learn how to evaluate claims made in news media, in advertising and in scholarly research, that are based on statistical evidence or reasoning.
3. Students will learn how to calculate and interpret basic descriptive statistics.
4. Students will learn how to calculate and interpret correlation coefficients, t-tests, F-tests, F-tests for two way factorial ANOVA designs
5. Students will learn how to interpret the results of simple regression analyses.
6. Students should leave the course with enough knowledge of statistics be able to design and analyze independent research projects and to take more advanced courses in experimental design and/or statistics.

On-line quizzes and hand-in homework: There will be **required** online quizzes associated with the material for every NIGHT.. These will vary in length. The quizzes are primarily drawn from the book, as indicated by the quiz titles. However, questions may also be drawn from material presented in class, posted online, or material you should remember from General Psychology. **There is a deadline for every quiz.** In addition, there will be homework problems that must be handed in—showing all of your calculations--the next day.

Exams: There will be two cumulative exams and a cumulative final.

Online material: Powerpoint slides will be posted for lectures. My intent is to post these in advance of class.

Learning and remembering the material covered in this course: Preview the text before you begin any serious reading. Before you read a chapter, skim

through it to understand the structure of the authors' presentation and formulate questions that interest you about the topics covered. Write your questions down, on paper, on your laptop, or on index cards. Then begin to read the chapter, reading for answers to your questions.

PERFORM ALL OF THE CALCULATIONS as you are reading through the chapter. The only way to learn statistics is to do statistical calculations....repeatedly.

Stop after every major section. Write (or type) any answers to your questions that you have found. Note any additional questions that you have. Take notes reviewing the major points of the section. Later in the week, review your chapter questions and notes, the PowerPoint slides, and your class notes.

Attendance: In the context of an abbreviated summer session, class attendance is even more important than in a 14-15 week semester.

Behavior in the classroom: As adults, students are expected to behave in a manner that is conducive to learning in a classroom environment. However, should a student's behavior be perceived by the instructor to be disruptive to fellow students in the class, the instructor will ask the student to leave the classroom, and if this recurs, then the disruptive student may be judged unable to successfully complete the course with a passing grade.

The schedule below is subject to change, but not by much!

Week	Dates	Topic/Assignments
1	T May 31 W June 1 Th June 2	Chapter 1: Probability, Mean, variance, and standard deviation Chapter 2: Frequency distributions and histograms Chapter 3: The Normal Curve
2	M June 6 T June 7 W June 8 Th June 9	Chapter 4: Z scores and the standard error of the mean Chapter 5: Introduction to inferential statistics Review and practice problems Exam 1: Chapters 1 - 5
3	M June 13 T June 14 W June 15 Th June 16	Chapter 6: The t distribution, $s_{\bar{x}}$ and confidence intervals Chapter 7: Correlation Chapter 8: Regression and statistical significance Chapter 9: Experimental design: the F and t tests for unrelated groups
4	M June 20 T June 21 W June 22 Th June 23	Review and practice problems Exam 2 Covering Chapters 6 - 9 Chapter 10: Two way factorial analysis of variance continued
5	M June 27 T June 28 W June 29 Th June 30	Chapter 11: Alternative forms of the t test Chapter 12: Power analysis, type 1 error and alpha, type 2 error and beta; determining sample size Continued Chapter 13: Assumptions underlying parametric statistical techniques and the F_{MAX} test
6	M July 4 T July 5 W July 6 Th July 8	Federal Holiday NO CLASS Chapter 14 Chi-Square Review and practice problems Final Exam Covering Chapters 10 - 14

Grading: Grades will be based on a point system, as follows

	Each Worth	Total
Exams	100 points each	300 points
On-line quizzes	Average score	100 points
Clicker quizzes	Average score	100 points
Hand-in Homework	5 points	100 points

Grading standards

- A 540 points
- B 480 points
- C 420 points
- D 360 points
- F < 360 points

Depending on the distribution of scores, grading standards may be more lenient. Standards will not be tougher if everyone does very well.

Cut-offs for “+” grades are determined at my discretion.

If you need a certain average to stay in school, to keep financial aid, to get into graduate or professional school, or just to keep your parents off your back, attend ALL CLASSES, study actively, take the quizzes, review frequently **starting at the beginning of the term.**

Practicing statistical calculations transforms your declarative knowledge into procedural knowledge.....but it takes LOTS of practice.... some research suggests that the inflection point in the learning curve is near 20 problems of the same type. While this result is from another domain of mathematics, the same principle applies in statistics.

Missed exams: If you miss an exam, in general, you get a zero. Don't miss exams. In the case of extraordinary circumstances (hospitalization, death in the family) you will have to produce documentation; with acceptable documentation, we can make arrangements for a makeup.

Special arrangements: If you are entitled to extended testing time or other testing accommodations, provide me with the documentation from the Office of Disability Services, and I will work with them to arrange alternate administration of your exams.