Syllabus for Quantitative Methods

Summer 2012

Psychology 200: H1

MTWTH 10:50 – 1:20 pm   Hill 116

July 9 – August 15

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Office: 327 Tillett Hall, Livingston Campus

Office hours: Tuesday AND Thursday morning, 9:00 am – 10:15 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.

 We will take a 10 minute break at about 12:10 (bring a snack, there isn't time to go get lunch)

Required Texts: Privitera, Statistics for the Behavioral Sciences Available at New Jersey Books on Easton Avenue in New Brunswick, and at Livingston Bookstore, and online on coursesmart (for less money) AND Student Study Guide with IBM SPSS Statistics Workbook for Statistics for the Behavioral Sciences.

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

Bring your calculator, pencils and plenty of lined paper to every class. You will be doing calculations in class. A sheaf of graph paper will also be helpful, but is not required.

Computer Lab: We will spend some of our class time in the computer lab, learning to use SPSS. In addition, you should expect to spend time outside of class, doing homework in the computer lab. Some homework must be done on SPSS.

If you are afraid of statistics: Before the course begins, read Larry Gornick'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 will learn how to report the results of statistical analyses in tabular, graphic and written form

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.

In-class quizzes: question slides will be interspersed throughout the lectures. In-class quizzes cannot be made up.

On-line quizzes and 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.**

 Exams: There will be three cumulative exams and a cumulative final. Exams 1 and 3 will be take home exams. The second exam and the final will be in-class exams.

Extra credit: the student site associated with the text book has two readings and questions associated with each chapter. For UP TO 5 points for each article and a maximum of 20 articles (credit may vary from 0 to 5 points) read the article, write a 3 – 5 sentence summary, answer the questions and hand in your summaries and your answers (one per page) before the exams. Extra credit must be type-written, with your name, the chapter, and the full citation for the article at the top of the page.

 Online material: Powerpoint slides will be posted for lectures. My intent is to post these in advance of class. SOME SLIDES USED IN LECTURE WILL NOT BE POSTED. These may be question slides or may appear as links (that won't work for you) on other slides.

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.

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 class room, 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	M July 9 T July 10 W July 11 Th July 12	Chapters 1 and 2 Introduction and Summarizing Data Chapters 3 and 4: Summarizing Data: Central Tendency and Variability Chapter 5: Probability **TAKE-HOME** EXAM 1 Chapters 1 - 4
2	M July 16 T July 17 W July 18 Th July 19	Chapter 6: Probability and Normal Distributions Chapter 7: Probability and Sampling Distributions Review **IN CLASS** Exam 2 Covering Chapters 1 – 7 (Extra Credit Due)
3	M July 23 T July 24 W July 25 Th July 26	Chapter 8: Introduction to Hypothesis Testing Chapter 9: Testing Means – Independent Samples t-testChapter 10: Testing Means – Related Samples t-tests Chapter 11: Estimation and Confidence Intervals
4	M July 30 T July 31 W Aug 1 Th Aug 2	Chapter 12: Analysis of Variance One Way Between Subjects Chapter 13: Analysis of Variance: One Way Within Subjects (Extra Credit Due) **TAKE HOME EXAM 3 Chapters 1 - 13**
5	M Aug 6 T Aug 7 W Aug 8 Th Aug 9	Chapter 14: Analysis of Variance: Two Way Between Subjects Factorial Design Chapter 15: Correlation Chapter 16: Linear Regression
6	M Aug 13 T Aug 14 W Aug 15	Chapter 17: Non-parametric tests: Chi-Square Chapter 18: Non-parametric tests for ordinal data Review **Final Exam** Covering Chapters 1 – 18 (Extra Credit Due)

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

Assessment Type	Worth	Total Points
Exams	100 points each (percent correct)	400 points
On-line quizzes and homeworks	Average percent correct	100 points
In-class quizzes	Average percent correct	100 points

You may earn up to 100 extra credit points

Grading standards

A   540 points

B   480 points

C   420 points

D   300 points

F   < 300 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.