EDUC 555: INTRODUCTION TO STATISTICS AND COMPUTER ANALYSIS I

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Office Hours:
Tuesday: 12:30—2:30, Friday: 1:00-2:00
Other times by appointment

Syllabus for Spring 2014

Course Objective: The objectives of this course are to (a) introduce students to the logic of statistics and hypothesis testing, (b) provide the fundamental knowledge and skills necessary to conduct elementary statistical analyses, and (c) provide the fundamental knowledge and skills necessary to understand statistics as they are used in contemporary educational research. By successfully completing this course, students will learn how to choose appropriate statistical procedures for testing research hypotheses, conduct fundamental statistical analyses by hand or by using statistical software, and comprehend and critique educational research. In addition, students will learn how to enter and analyze data using SPSS (a popular statistical software package).

Course Requirements:

1. Attendance and Participation: Students are expected to actively participate in class. Students taking this course for credit will need to attend all (or nearly all) classes. Statistics is like a language, and so if you miss more than one class, it is likely that you will not be able to keep up with the material. Therefore, if you anticipate missing more than one class, or if you are unable to make it to class on time, you should consider taking the class another semester when you are able to attend all sessions. Anticipated absences should be brought to the attention of the professor in advance.

2. Assignments: Homework assignments will be given weekly. These assignments may include textbook or class exercises, group projects, readings, and computer exercises.

3. Examinations: There will be two take-home examinations. One is a mid-term exam, the other is a final exam. The final exam will be cumulative. Tentative examination dates and topics are listed on the course schedule (below).

Grading: Your grade in this course will be determined using the following weighting scheme:

Activity	Weight
Attendance/Participation	.10
Assignments	.30
Midterm	.30
Final Comprehensive Examination	.30

Grading (continued):

Attendance/participation and all assignments are graded on a 0-100 scale. Each missed class reduces the attendance/participation grade by 10 points. Medical illness and other acceptable emergencies will be exceptions to this policy. Final grades of 94-100 receive an A, 90-93 receive an A-, 87-89 receive a B+, 81-86 receive a B, 78-80 receive a C+, 70-77 receive a C, and below 70 receive an F.

Late assignments: Late assignments will be reduced by one-letter grade for each day late (e.g., a maximum grade of "C" will be given to an exceptional assignment submitted two days late).Unforeseen emergencies, as determined by the professor, will be exceptions to this policy.

Textbook: Gravetter, F. J., & Wallnau, L .B. (2009). *Statistics for the behavioral sciences (8th edition)*. Belmont, CA: Wadsworth.

This text is available in the textbook annex and is selling for about $35 used on Amazon.com. I will also distribute relevant articles throughout the semester.

Other reference materials:

1. American Psychological Association (2009). *APA Publications Manual* (6th edition). Washington, D.C.: Author.

2. Campbell, D.T., & Stanley, J.C. (1966). *Experimental and quasi-experimental designs for research.* Chicago: Rand McNally. The classic "text" on research design, which is integral to statistics.

3. Wainer, H. (1997). *Visual revelations: Graphical tales of fate and deception from Napoleon Bonaparte to Ross Perot*. Useful for understanding how to display data and report research results.

Resources for learning course material:

You have at least five resources for helping understand the material presented in this course. Specifically,

(a) Me: I will do my best to present material clearly in class. Your class notes should be useful for completing assignments and examinations. In addition, I am available outside of class during my office hours and by appointment. You can also ask me questions using e-mail. See the top of this syllabus for office hours and e-mail address.

(b) The textbook: I selected this textbook because I think it does a good job explaining the material. Feel free to ask me questions about unclear material in the textbook.

(c) The handouts: I will give you numerous handouts throughout the semester. These handouts are designed to summarize and supplement the lectures. I strongly recommend you review them in completing assignments and exams. As a former student once stated in class "The handouts are key." That student received an "A" in the course.

(d) The teaching assistants. Joshua and Molly are two of most knowledgeable and helpful graduate students I have ever met—and I've met a lot! See them during their office hours or contact them via email.

(e) Each other: I encourage you to discuss class content with your classmates. You may also want to form study groups. Discussing the material will help you absorb the more difficult concepts, and "teaching" others is the best way to retain new material. However, note the plagiarism policy:

Plagiarism policy: Statistics is a good course to study in groups, and I encourage you to do so. However, direct copying of someone else's work is not allowed. Printing out someone else's computer output, and handing it in as your own work, is also not allowed. Passing off someone else's work as your own will result in failing this course. Please see me if you have questions about this policy, or if you have trouble completing any assignments. According to the University's *Academic Regulations* (http://www.umass.edu/registrar/sites/default/files/academicregs.pdf), plagiarism is defined as "knowingly representing the words or ideas of another as one's own work in any academic exercise. This includes submitting without citation, in whole or in part, prewritten term papers of another or the research of another, including but not limited to commercial vendors who sell or distribute such materials." Please see me if you have questions about this policy, or if you have trouble completing any assignments.

Accommodation policy: I strive to provide an equal educational opportunity for all students. If you have a physical, psychological, or learning disability, you may be eligible for reasonable academic accommodations to help you succeed in this course. If you have a documented disability that requires an accommodation, please notify me within the first two weeks of the semester and I will be happy to make appropriate arrangements.

TENTATIVE CLASS SCHEDULE FOR SPRING 2014

Class	Topic	Reading*
1/27	Empowering Yourself Statistically Fundamental Statistical Concepts	Carlson (1995) Text Chapter 1
2/3	Describing and Exploring Data	Text Chapter 2, Wainer (1984)
2/10	Descriptive Statistics: Central Tendency & Variability	Text Chapters 3 & 4
2/18	*NOTE: This is a TUESDAY* The Normal Distribution	Text Chapters 5 & 6
2/24	Probability	Text Chapter 6
3/3	Probability (cont.) & Sampling Distributions	Text Chapters 6 & 7
3/10	Introduction to SPSS Hypothesis Testing	SPSS Handout Text Chapter 8
3/17	**MIDTERM Due** NO CLASS: SPRING BREAK	Go somewhere warm
3/24	Testing Group Means I	Text Chapter 9
3/31	Testing Group Means II	Text Chapters 10, 11, & 12
4/7	Statistical Analysis Using SPSS	Handout; Assignment
4/14	Correlation	Chapter 16
4/23	*NOTE: This is a WEDNESDAY* Regression	Chapter 17
4/28	(Categorical Data Analysis) Review & Discussion	(Chapter 18)
5/7	**Take-Home Final Due (no class)**	All of the above

*Handouts on almost all of these topics will also be distributed in class and should be read.