

## CEP 932: Quantitative Methods in Education Research I

Fall 2009

Dr. Amita Chudgar ([amitac@msu.edu](mailto:amitac@msu.edu))

### Class time and location

Tuesdays, 4:10-7:00 pm  
Natural Science Bldg, Room 351

### Office hours and location

Tuesdays, 12-1 pm  
426, Erickson Hall

### Teaching Assistant (office hours and location)

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Anne Traynor, Mondays 3:45-5:45pm, Thursdays 5:30-6:30pm, Graduate Student Lounge, 1<sup>st</sup> floor, Erickson Hall

### Course description

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Through this course I aim to provide an introduction to data analysis and statistical inference in education research. Students will learn to describe data, to select and compute statistical estimates and hypothesis tests, to use SPSS computer package to accomplish these tasks, and to interpret and write about the results of the estimates and tests. You will require some comfort with basic Algebra.

We usually tend to be a large class, and as we begin this semester long process of learning quantitative research there are a few additional things I would like to note. First, different individuals will come to the class with different levels of knowledge and comfort about quantitative research. Those who know a lot coming in may find the introduction classes a bit repetitive, for those who are less familiar will have to commit more time every week to make sure that they are not left behind. As the instructor, one of my goals is to make sure we cover all the material we have planned for the semester, while ensuring that the pace is acceptable to a majority of the students. Second, it is very important to keep up with the course material every week. This is a class where we are building upon concepts we learn every week. So falling behind in week 4 say may mean that you have fallen behind for weeks 5, 6 and so on already. If you find the need for additional help, please talk to me or the TA, we are always happy to help. Finally, I greatly appreciate your questions. Please ask questions. They help you learn, they help others learn, they help me understand what I can explain differently. Sometimes, if I am not able to respond within the given class time I will make that call, but you should always feel free to ask during class.

### Grading

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Grades will be assigned based on the percent of the total possible points that you receive on the final exam and the assignments [4.0 > 90%, 3.5 > 80%, 3.0 > 70%, 2.5 > 65%, 2.0 > 60%]. The scores for exams and assignments are weighted as follows:

- 5 Quizzes, 6 points each = 30 points
- 6 Homework Assignments, 9 points each = 54 points
- Final exam = 16 points

### Assignment submission policy

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- We will post the assignment on Wednesday every week. The completed assignment will be due back next Tuesday in class.

- Quizzes are open-book and open-note, and you may use calculators. You are expected to work individually on the quizzes. Make-up quizzes will only be permitted at the discretion of the instructor.
- Some of the later homework assignments will contain tasks and questions that will require you to use a statistical computer program SPSS that is available on MSU microlab computers (use of other statistical programs must be approved by the instructor).
- You may work in groups of three or less on your homework assignment. You will submit a single copy of the group homework with all the names listed; all group members will receive the same grade.
- Except at the discretion of the instructor (arranged prior to the due date), all assignments must be submitted at the beginning of class on the day that they are due.
- You are not required to work with the same group for every homework

### Textbook

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Ott, R.L. and Longnecker, M. (2001). *An Introduction to Statistical Methods and Data Analysis* (5th ed.). Pacific Grove, CA: Duxbury.

### Resources for SPSS

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George, D. & Mallery, P. (2005). *SPSS for Windows Step by Step: A Simple Guide and Reference* (5th ed. Covers SPSS 12.0; 4th ed. Covers 11th edition).

Web resource: <http://www.ats.ucla.edu/stat/spss/>

### Tentative course schedule (subject to changes)

[Note: I will update this schedule once the poll results for the makeup class are in.]

Class	Date	Topic	Due
1	Sep 8	Introduction, Data collection, sampling	
2	Sep 15	Descriptive Statistics	Q1
3	Sep 22	Descriptive Statistics	-
4	Sep 29	Probability Distribution	H1
5	Oct 6	Probability Distribution	Q2
6	Oct 13	Comparing means Z-tests and t-tests	H2
7	Oct 20	Comparing means Z-tests and t-tests	Q3
8	Oct 27	Comparing means Z-tests and t-tests	Q4
9	Nov 3	ANOVA	H3
10	Nov 10	SPSS workshop (BCC-N012)	-
11	Nov 17	Categorical Data: Chi-square test	H4
12	Nov 24	Correlation and Regression	Q5
13	Dec 1	Correlation and Regression	H5
14	Dec 8	Correlation and Regression	H6
15	Dec 14	Final Exam (5:45-7:45 p.m)	

*Please note: MSU seeks to ensure that its programs are accessible to all persons. Students in need of special assistance or an accommodation regarding any of the course requirements as outlined in the syllabus and discussed in class are advised to notify me immediately. We will meet privately to discuss a resolution of your issue, which may or may not include an appropriate referral. Confidentiality will be maintained regarding your special needs.*