

STA 481/675 - Experimental Design Fall 2013

Instructor: Dr. Scott Richter

Office: Petty 107

Hours: TTh - 10:30-11:00; 12:30-1:30;
and by appointment

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I. About the course

This course covers concepts of statistical research design and analysis. Stressed will be elements of designing experiments and observational studies to ensure valid statistical inferences may be made. Topics will include randomization, complete and incomplete block designs, factorial experiments, planned confounding, split-unit and repeated measures designs, power and sample size determination. Other topics may be discussed if time permits. After completing the course, students will be able to: 1) understand the fundamentals of statistical research design; 2) design a comparative experiment or observational study to effectively address research questions for a variety of situations; and 3) correctly analyze data resulting from a research study and draw appropriate statistical conclusions.

Prerequisites:

STA 481: A second course in statistical methods, such as STA 291, or permission of instructor.

STA 675: STA 662 or permission of instructor.

Students are expected to be familiar with basic concepts of randomization and random sampling, confidence intervals and significance tests for one and two samples, one- and two-factor analysis of variance, and simple and multiple linear regression.

We will use the text: *Design of Experiments: Statistical Principles of Research Design and Analysis, 2nd edition*, by Robert O. Kuehl, 2000.

II. Assessment

- 1) Assignments consisting of exercises from the text and supplemental exercises will be assigned regularly, collected and graded. These will be designed to provide practice and assess comprehension of concepts from readings, class discussions, and lectures. Students are encouraged to discuss solutions to Assignments, but the final write-ups for submission should be done independently. ****Late assignments will not generally be accepted without prior arrangement, and will receive a score of zero.***
- 2) There will be two exams.
- 3) STA 675 students will complete a Design Project, and will be required to complete additional exercises on assignments and tests.

III. Determination of course grade

STA 481

Assignments: 60% of course grade.
 Tests: 40% of course grade.

Grading scale:

Overall average	Grade
90 or above	A
80-89	B
70-79	C
60-69	D
Below 60	F

STA 675

Assignments: 50% of course grade.
 Tests: 35% of course grade.
 Project: 15% of course grade.

Grading scale:

Overall average	Grade
90 or above	A
80-89	B
70-79	C
Below 70	F

IV. Academic Integrity

Students are encouraged to discuss solutions to assignments, but each student is expected to write up his or her solutions independently. Copying other people's work is plagiarism and is an Honor Code violation. You are responsible for knowing and abiding by the [UNCG Academic Integrity Policy](#)

V. Disabilities

If you have a documented disability and wish to discuss academic accommodations, please contact me as soon as possible.