

# MTHSC 405    Fall 2013

## Statistical Theory and Methods II

**INSTRUCTOR:** Colin M. Gallagher

**OFFICE:** O-307 Martin Hall

**PREREQ:** MTHSC 301 or equivalent

**OFFICE HOURS:** 1:30-2:30 F and by appointment (and by drop-in)

**CLASSROOM:** Martin M 103

**TIME:** 11:15—12:05 M W F

**E-MAIL:** [cgallag@clemsn.edu](mailto:cgallag@clemsn.edu)

**PHONE:** 656-2286 (office)

**TEXTBOOK:** *The Statistical Sleuth* (3<sup>rd</sup> ed.) by Ramsey and Schafer.

**Learning Outcomes :** Successful students will be able to:

- Design an experiment to answer investigate a research hypothesis
- Write a protocol for a designed experiment
- Identify appropriate statistical methods for designed experiments and observational studies for both categorical and continuous variables.
- Perform appropriate multiple regression analyses including: selecting variables, fitting a model and using the model for inference and prediction.
- Use statistical diagnostic tools to judge the appropriateness of a model.
- Analyze and interpret the results from a designed experiment with 2 factors.

**Attendance Policy:** You are expected to be regular and punctual in your class attendance. If I am more than 15 minutes late, class is canceled for the day.

**Exams:** We will have two exams during the semester. These will be announced at least one week in advance. All exams (including the final exam) will be cumulative.

**Homework (HW) and Quizzes:** Occasionally we will have an activity or quiz which will be turned in at the end of class. HW problems will be assigned and may be collected for credit.

**Project:** Students will be expected to design an experiment, write a protocol and analyze data from a designed experiment. The project will include a written report and an oral presentation.

**Grading:** Your course grade will be calculated according to the weighting below.

2 scheduled exams	30%
Quizzes/HW	20%
project	25%
final exam (12/10: 8:00—10:30 am)	25%

**Academic Integrity:** “As members of the Clemson University community, we have inherited Thomas Green Clemson’s vision of this institution as a ‘high seminary of learning.’ Fundamental to this vision is a mutual commitment to truthfulness, honor, and responsibility, without which we cannot earn the trust and respect of others. Furthermore, we recognize that academic dishonesty detracts from the value of a Clemson degree. Therefore, we shall not tolerate lying, cheating, or stealing in any form.”