Math 4056 Mathematical Statistics

<u>Time and place.</u> MWF 09:40-10:30, Lockett 240

<u>Course web site.</u>   http://www.math.lsu.edu/~madden/M4065
                                (This will be operational by end of first week of class.)

<u>Instructor.</u>   James Madden
                213 Prescott Hall,
                email: madden@math.lsu.edu, cell phone: (225)-978-3525

<u>Goal.</u> This course deals with the mathematical principles that underlie and justify the most common basic techniques of statistical inference. The focus is not on the development and use of techniques for dealing with complex statistical problems, but on understanding the most commonly used statistical methods clearly and rigorously.

<u>Textbook.</u> Casella and Berger: *Statistical Inference* 2nd ed.

I selected this book because it is frequently cited as required background in more advanced books and courses. The Amazon.com reviews are mixed, however, which suggests that this might not be a "one-stop" source for all students. I will suggest readings from other sources at strategic times.

<u>Course content</u> (with my estimate of the time we will spend on each part).

- Probability review and Ch. 4. Multiple Random Variables. 2 weeks.
- Ch. 5. Properties of a Random Samples. 2 weeks.
- Ch. 6. Principles of Data Reduction. 1 week.
- Ch. 7. Point Estimation. 2 weeks.
- Ch. 8. Hypothesis Testing. 2 weeks.
- Ch. 9. Interval Estimation. 1 week.
- Ch. 11. Analysis of Variance. 2 weeks.
- Ch. 12. Regression Models. 2 weeks.

<u>Grading.</u> Homework 25%. Friday quizzes 25%. Midterm and final 50%.