UNIVERSITY OF CENTRAL FLORIDA
Department of Mathematics

Spring 2006

Course:	MAP6111, **MATHEMATICAL STATISTICS**
Class Meets:	MAP 108, 6:00 - 7:15 p.m., MW
Instructor:	Dr. Marianna Pensky
Office:	MAP 202A
Office Phone	407-823-2115
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Office Hours:	10:30 – 11:30 a.m. MWF and 5 –6 p.m., MW
Textbook:	George Casella and Roger L. Berger "Statistical Inference", Second edition

Course contents: Common families of distributions. Conditional distributions, hierarchical models and mixture distributions. Properties of a random sample. Sufficiency and likelihood priciples. Point and interval estimation. Hypothesis testing. Linear regression. The analysis of variance.

Grade scale:	90-100 % – A
	80-89 % – B
	70-79 % – C
	60-69 % – D
	< 60 % – F

Prerequisites: You don't need to take MAP 6110 (Probability and Measure) to enter the course. However, the knowledge of the main concepts of probability theory is necessary for the success in this course. The list of topics you need to review is enclosed to the syllabus.

Course Policy: There will be no in-class exams. Several homework assignment will be given to test your mastering of the material. Also, we shall have one or several classes in computer Lab and there will be an assignment involving processing of data.

Withdrawal deadline: March 3.
Holidays: January 16, March 13–18 (Spring Break).

TOPICS FOR REVIEW

1. Basics of probability theory (Section 1.2)
2. Conditional probability and independence (Section 1.3)
3. Random variables (Section 1.4)
4. Distribution functions (Section 1.5)
5. Density and mass functions (Section 1.6)
6. Distributions of functions of random variables (Section 2.1)
7. Expected values (Section 2.2)
8. Moments and moment generating functions (Section 2.3)
9. Joint and marginal distributions (Section 4.1)
10. Conditional distributions and independence (Section 4.2)
11. Bivariate transformations (Section 4.3)
12. Covariance and correlation (Section 4.5)

Remark. If you use Casella & Berger book for review, you don't need to read every example in the sections listed above but you should know main definitions and facts.