Spring 2010
STA 4322 – Intro. Statistics Theory (Sec. 7474)
STA 5328 – Fnd. Statistical Theory (Sec. 7482)
Tuesday 4, Thursday 4/5 @ Griffin/Floyd 100

Instructor: Dr. Larry Winner

Office: 228 Griffin/Floyd

E-mail: winner@stat.ufl.edu

Phone: (352) 273-2995

Web Page: www.stat.ufl.edu/~winner/

Textbook Information:
MATHEMATICAL STATISTICS WITH APPLICATIONS
Authors: WACKERLY, MENDENHALL, AND SCHEAFFER   Publisher: DUXBURY
 Edition: 7TH   ISBN: 9780495110811

Course Description:

This course is a second semester course in Mathematical Statistics that extends the fundamentals of probability to cover topics in statistical inference. Tentative List of Topics include:

- Sampling Distributions and the Central Limit Theorem (Chapter 7)
    - Sampling Distributions Related to the Normal (7.2)
    - Central Limit Theorem and Proof (7.3-7.4)
    - Normal Approximation to the Binomial (7.5)
- Estimation (Chapter 8)
    - Point Estimators – Bias and Mean Square Error (8.2)
    - Common Unbiased Estimators (8.3)
    - Evaluating Quality of Estimators (8.4)
    - Confidence Intervals (8.5)
    - Large-Sample CI's (8.6)
    - Sample Size Determination (8.7)
    - Small-Sample CI's for μ, $\mu_1 - \mu_2$ (8.8)
    - CI's for σ^2 (8.9)
- Properties of Estimators and Estimation Methods (Chapter 9)
    - Relative Efficiency (9.2)
    - Consistency (9.3)
    - Sufficiency (9.4)
    - Rao-Blackwell Theorem / MVUE (9.5)
    - Method of Moments (9.6)
    - Method of Maximum Likelihood (9.7)

- o Large-Sample Properties of MLE's (9.8)
- Hypothesis Testing (Chapter 10)
  - o Elements of a Statistical Test (10.2)
  - o Common Large-sample Tests (10.3)
  - o Type II Error Rates and Sample Size Determination (10.4)
  - o Connection Between Tests and CIs (10.5)
  - o *P*-values (10.6)
  - o Comments on Theory of Tests (10.7)
  - o Small-Sample Tests for μ, $\mu_1 - \mu_2$ (10.8)
  - o Tests of Variances (10.9)
  - o Power and Neyman-Pearson Theorem (10.10)
  - o Likelihood Ratio Tests (10.11)
- Linear Models and Least Squares (Chapter 11)
  - o Linear Models (11.2)
  - o Method of Least Squares (11.3)
  - o Properties of Least-Squares Estimators (11.4)
  - o Inferences Regarding Regression Parameters (11.5)
  - o Correlation (11.8)
- The Analysis of Variance (Chapter 13)
  - o ANOVA Procedure (13.2)
  - o 1-Way Layout – Comparing More than 2 Means (13.3)
  - o ANOVA Table for 1-Way Layout (13.4)
  - o Model for the 1-Way Layout (13.5)

Exam Dates and Homework:

- Mini-Exam 1 (1-Hour) - January 26,   12%
- Major- Exam 1 (2-Hour) – February 11,   24%
- Mini-Exam 2 (1-Hour) – March 4, 12%
- Major-Exam 2 (2-Hour) - April 1, 24%
- Mini-Exam 3 (1 Hour) – April 20, 12%
- Homework Projects – 4 Computer-Based Simulation projects (4% Each)

Course Policies:

- Turn off cell-phones and all electronic devices (except calculators) during class and exams.
- Exams are closed-book/notes. Any relevant tables will be supplied.
- Practice Problems from the textbook will be posted on class web-site. They will be good practice for exam problems.
- E-mail is a terribly inefficient way to teach statistics. If you'd like to see a particular problem worked out in class, send a request in advance. Do not expect a typed detailed response.
- E-mail is not a substitute for attending instructor and TA office hours.

Course Grade Cut-offs:

A	A-	B+	B	B-	C+	C	C-	D	E
90	87.5	85	80	75	70	65	60	50	

Attendance/Exam/Assignment Policies: While attendance is not taken, students are expected to attend lectures and participate in class. Make-up exams will only be considered with documented medical event or conference attendance (graduate students). Early exams will be given under no circumstances. Assignments are to be handed in during class on the date the assignment is due in paper format. Electronic submission of assignments will not be accepted. Turn off cell phones during classes.

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

University Grading Points:

A	A-	B+	B	B-	C+	C	C-	D	E
4	3.67	3.33	3	2.67	2.33	2	1.67	1	0

Online Course Evaluations: The University has an online course evaluation system. Late in each semester (after final withdrawal date), students can go to the GATORRATER portal and evaluate courses. The website is located at: https://evaluations.ufl.edu/evals/Default.aspx.

University Policies:

Academic Dishonesty: All members of the University Community share the responsibility to challenge and make known acts of apparent academic dishonesty. Acts of academic dishonesty will not be tolerated and will be referred to the Student Honor Council.

Incomplete: An incomplete grade may be assigned at the discretion of the instructor as an interim grade for a course in which the student has completed a major portion of the course with a passing grade, been unable to complete course requirements before the end of the term because of extenuating circumstances, and obtained agreement from the instructor and arranged for resolution of the incomplete grade in the next term. Instructors are not required to assign incomplete grades. For complete details please visit:
CLAS incomplete grade policies and forms.

Campus Resources:

Counseling and Wellness Center: http://www.counseling.ufl.edu/cwc/

Academic Resources: http://www.ufl.edu/academics/resources/

Disability Resource Center: https://www.dso.ufl.edu/drc/

Student Health Care Center: http://shcc.ufl.edu/