Course Outline — Summer Term B 2017

STA 4322 **Introduction to Statistics Theory**
STA 5328 **Fundamentals of Statistical Theory**

Class:
MTWThF Period 2 (9:30 a.m. - 10:45 a.m.)
Little Hall 113
(No class on Tuesday July 4)

Instructor:
Dr. Andrew Rosalsky
Griffin-Floyd Hall 206
Telephone: 273-2983
E-mail: rosalsky@stat.ufl.edu
Web: http://www.stat.ufl.edu/personnel/usrpages/rosalsky.shtm

Office Hours: MTWTh (but not Friday) Period 3 (11:00 a.m. - 12:15 p.m.)

Graduate Assistant:
Ms. Nilanjana Chakraborty
Griffin-Floyd Hall 234
E-mail: nchakraborty@ufl.edu

Office Hours: MTWTh (but not Friday) 1:00 p.m. - 4:00 p.m.

Course Objective:
This course is designed to provide a firm foundation in the basic theory of statistical inference. It covers the classical theory of estimation and hypothesis testing, as well as the theory of linear models and least squares. The probability theory developed in STA 4321 (or STA 5325) is used in developing the theory of estimation and hypothesis testing in the course.

General Education Credits:
This course satisfies General Education Credits in the mathematical sciences. Students learn how to summarize data and how to make appropriate decisions based on data.

Prerequisites:
STA 4321 or STA 5325

Attendance:
Classroom attendance is fully expected.

Text:
D. D. Wackerly, W. Mendenhall, and R. L. Scheaffer Mathematical Statistics with Applications (Seventh Edition) Duxbury 2008.

Course Coverage:
The topics covered will be those from Chapters 7-11 with additional topics from Chapters 12 and 13 if time permits.

Grading Policy:
Course grades will be determine by performance on three in-class exams, all equally weighted. Problems on exams will be similar to examples done in class, homework exercises, and some of the derivations done in class.

Exam 1 (100 points) Chapters 7 and 8 Friday July 7
Exam 2 (100 points) Chapter 9 Thursday July 20
Exam 3 (100 points) Chapters 10 and 11 Friday August 4

A student must notify her/his instructor prior to the time of an exam if the student cannot be present for the exam because of illness. Documentation must be provided. The Department of Statistics' policy toward make-up exams is firm: In particular, we are not able to provide make-up exams for students who would like to attend or participate in graduations, weddings, anniversaries, class reunions, family reunions, vacations, or other activities of a personal nature.

A total of 300 points may thus be accumulated. The determination of the range of scores for each letter grade is made after Exam 3 is graded and points are totaled, but past experience has shown that the following modification of the standard grading system provides a rough approximation:

A =270-300 A- =261-269 B+ =252-260 B =240-251 B- =231-239 C+ =222-230 C =190-221 D =169-189 E =0-168

In any case, the numerical scores required for the various letter grades will not be higher than those given above. It is the policy of the Department of Statistics that there will be no C-, D+, or D- grades in STA 4322/5328. However, typically there is some departure from the standard grading scale. In such a case, STA 4322 and STA 5328 are graded separately and will not have the same grading scale. More specifically, according to IJF and Department of Statistics policy, students enrolled in STA 5328 are expected to exhibit academic performance at a more rigorous and demanding level than that which is expected of students enrolled in STA 4322.

Homework Exercises: A large number of homework exercises from the text are assigned below. Although the solutions to these problems will not be collected, it is strongly recommended that the student work on as many of the exercises as possible.

Chapter 7: 9,20,29,33,43,49,56[there is an error in the Solutions Manual],57, 58,59,72,73,87[there is an error in the Solutions Manual],93,94,104

Chapter 8: l,6,8,9,10[there is an error in the Solutions Manual to part b],12,13,19,21,28,39,41a,43,44[there is an error in the Solutions Manual to parts b and c],45,58,61,65,74,75,77,83,84,103,125[there is an error in the Solutions Manual regarding the alternative expression], 129,133[there is an error in the Solutions Manual]

Chapter 9: 2,5,6,17,18,19,20,26,30,33,34,36,39,40,42,44,45,46,48,58,59,65,70,72,76,80,81, 82,83,89

Chapter 10: 20,21,30,33,34,38,39,41,42,50,51,55,57,63,64,73,79,80,82[there is an error in the Solutions Manual],94,95,101

Chapter 11: 1,3,4,15,16,20,22,23,35,39,42,46,48,55,66,92,102

Chapters 12 and 13: No problems will be assigned.

Academic Honesty: University of Florida students are expected to abide by the following: "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity."

Classroom Accommodations: Students requesting classroom accommodations must first register with the Dean of Students Office. The Dean of Students Office will provide the student a letter to be given to the instructor when requesting accommodation.

Student Evaluation of Instruction: Students will have the opportunity to provide feedback on the quality of instruction in this course and all students are expected to complete the online evaluation which will be made available near the end of the term.

About the Department of Statistics: The Department of Statistics at the University of Florida is one of the nation's leading statistics departments. In the April 2008 *U.S. News & World Report* rating of statistics graduate programs, the UF Department of Statistics was ranked number 9 in the nation among all statistics departments and number 5 in the nation among statistics departments at public universities. The Department awards approximately 15 Bachelors degrees, 10 Masters degrees, and 4 Ph.D. degrees per year. The Statistics Department, chaired by Professor Brett Presneli, has a faculty with a national and international reputation for their research. The research interests of the faculty include both theoretical and applied statistics. We welcome inquiries about our programs. The Statistics Department's main office is 102 Griffin-Floyd Hall (telephone 392-1941). You are welcome to check out the Department's web site at http://www.stat.ufl.edu.

About the Instructor: Dr. Andrew Rosalsky received the Bachelors degree and Masters degree in Mathematics from Indiana University in 1970 and 1972, respectively. He received the Ph.D. degree in Statistics from Rutgers University in 1978. Dr. Rosalsky's research area is probability limit theorems. He spent the 1977-78 academic year as a Visiting Assistant Professor of Mathematics at Indiana University and then joined the UF Statistics faculty as an Assistant Professor in the fall of 1978. He was promoted to Associate Professor in 1984 and to Professor of Statistics in 1990. Dr. Rosalsky has published over 125 articles on probability theory in professional journals. His Curriculum Vitae, which includes a listing of his publications up to June 2017, is at http://www.stat .ufi .edu/personnel/usrpages/rosalsky.shtm. Since 1989 he has been an Associate Editor of *International Journal of Stochastic Analysis* and in 1994 he joined the Editorial Board of the *International Journal of Mathematics and Mathematical Sciences*. Dr. Rosalsky has lectured widely on his research throughout many parts of the United States and he has also given talks in Canada, the Soviet Union, Greece, and Italy. Dr. Rosalsky, his wife Mercedes, and their daughter Rachel Natasha (a 2014 UF alumna) are proud and pleased to be members of the Gator Nation.