Course Information

Time: MWF 12:50 – 1:40 p.m. (Period 6)  
Location: LEI 207

Instructor: Dr. Brett Presnell  
E-mail: presnell@stat.ufl.edu

Office: 220 FLO  
Phone: 392-1941 Ext. 236

Web Page: http://www.stat.ufl/~presnell

Office Hours: Office hours will be posted on the instructor’s web page.

TA: The teaching assistant for this course will be Jing Wang. His office hours and other contact information will be posted on the course web page.


Course Web Page: Additional information concerning the course will be posted on the web at http://www.stat.ufl/~presnell/sta4322

Objectives

The sequence of courses STA 4321-4322 (5327-5328) develops the basic mathematical theory of statistical inference. In the first course, STA 4321, the student is introduced to probability and distribution theory. In STA 4322, these methods are used to develop the theory of estimation, hypothesis testing, linear models, and experimental design as covered in Chapters 7–13 of the text.

Course Policies

Grading

Three exams will be given during the term (30% each). The remainder of the grade (10%) will be determined by quizzes and any homework problems that may be collected. Course averages of at least 90%, 80%, and 70% will guarantee letter grades of A, B, and C, respectively. Time and place of exams will be announced in class and posted on the course web page.

Makeups

If a student wishes to be excused from an exam for non-emergency reasons, the student must make arrangements with the instructor before the scheduled day of testing. Otherwise, students will be allowed to make up a missed exam or make other arrangements to
replace the missed portion of their grade *only* in case of an documented emergency or a medical problem. Such arrangements must be made as soon after the exam as possible. In case of a medical problem, the student must present a letter from a *doctor* stating that the student was unable to take the exam. In particular, a note stating simply that the student visited the infirmary on the day in question will *not* be accepted.

**Honesty**

Students are expected to adhere to the student honor code, holding themselves to the highest standards of honesty and integrity.

**Homework Problems**

Most of the questions appearing on exams will be similar to examples from the lectures and to homework exercises. A list of suggested homework problems will be posted on the course web page. In order to master the course material and succeed on the exams, it is essential for the student to gain experience by solving problems on his/her own. Thus you should do as many of these exercises as you can, and make sure to ask about any that you do not understand.

**Review of STA 4321**

Students in STA 4322 are expected to know and be able to use definitions and results from STA 4321. Some of this material will be reviewed in context while developing new ideas in STA 4322, but for the most part the student is responsible for reviewing on their own. The instructor will be happy to answer any questions which may arise in this process.

Some of the basic definitions and results required from STA 4321 are:

1. Definition of the expected value (mean), variance, covariance, and moment generating function (m.g.f.) of a random variable, and how to compute them.

2. The probability function or probability density function and the mean, variance, and m.g.f. of each of the following distributions: Binomial, Geometric, Poisson, Uniform (not m.g.f.), Normal, and Gamma. Recall also that an Exponential distribution is a Gamma distribution with $\alpha = 1$, and the Chi-square distribution with $\nu$ degrees of freedom is a gamma distribution with $\alpha = \frac{\nu}{2}$ and $\beta = 2$.

3. How to compute means, variances, and covariances of linear combinations of random variables (see Section 5.8).

4. Results from Chapter 6 concerning the distributions of functions of random variables.

5. Most of the material in section A.1.11 (pp. 746–7). In particular, know the Binomial expansion, the Geometric series, and the Taylor series of $e^x$. Also know the basic facts about the Gamma function, such as $\Gamma(t+1) = t\Gamma(t)$ for $t > 0$ and $\Gamma(n) = (n-1)!$ for $n = 1, 2, \ldots$. 