

# STA 3032 Engineering Statistics – Spring 2013

*Prerequisite:* MAC2311

## Instructor:

Dr. Yasar Yesilcay ([yy@stat.ufl.edu](mailto:yy@stat.ufl.edu))

**Office:** Griffin Floyd 101B, **Phone:** (352) 273 – 1839

**Office Hours:** Tuesday and Thursday 11:45 – 1:40 and by appointment

**Course Web Address:** [www.stat.ufl.edu/~yy/STA3032](http://www.stat.ufl.edu/~yy/STA3032)

## Teaching Assistants: TBA

## Course Description:

In this course we will survey of the basic concepts in probability and statistics with engineering applications. Topics include probability, discrete and continuous random variables, estimation, hypothesis testing and linear and multiple regression.

[General Education: Mathematics (M), Math Requirement (MR)]

## Course Materials Required:

- 1) Scheaffer/Mulekar/McClave *Probability and Statistics for Engineers*, 5<sup>th</sup> ed., Brooks/Cole Cengage Learning, 2011 [ISBN 0-534-40302-6]  
[The list price of this book (may be the same at Bookstore) is extremely high and I'm sorry about that, but it is the best book I could find. However, lower prices can be found online, or you may rent online copies at lower prices. Check the publisher's web address.]
- 2) Calculator capable of calculating (at least) means and standard deviations

**Statistical software:** Some assignments require the use of statistical software, such as Minitab (a statistical computing package) and tests and lecture notes will use Minitab printouts. Minitab can be found on the CIRCA lab computers, may be purchased at the campus bookstore. [I do not suggest that you buy it if you do not need for another course. Use CIRCA labs when needed.] You may also download Minitab free for 30 days at [www.minitab.com](http://www.minitab.com). [If you decide to download it, please wait until the assignments are announced.]

## Homework:

There will be assigned problems for each week. (See last page of this document.) These will not be collected. However, **one or more of these questions will be a quiz question.** You will be given just enough time to copy your answers from your notebooks to the quiz paper.

**Quizzes:** There will be a **5 minute quiz every Friday**, based on the assigned homework questions. Students are permitted to copy the answers from their notebooks. **Calculators will not be permitted during the quizzes** when the quiz question(s) is/are not modified. So you have to do all calculations at home and come to class with the answers, that contain as much detail (words!) as possible,

**Tests:** Three multiple choice tests will be given in class on the dates listed below in our class. You will need to use a calculator in these exams. Make sure you know how to use your calculator. Exam dates are fixed; contents may change depending on what we can cover.

Tests	Dates	Coverage
Test - 1	Friday, 2/15/2013	Chapters 1, 2 4
Test - 2	Friday, 3/22/2013	Chapters 5, 6
Test - 3	Wednesday, April 24, 2013	Chapters 7, 8 10

**Make sure to bring your calculator, pencils, eraser and A PICTURE ID to the tests.**

### **Grades:**

Grades will be based on the 3 test results (30% each) and the quiz grades (10%). **Lowest 2 quiz grade will be deleted because there will not be any makeup for quizzes for any reason.** Your total points (out of 100) will be rounded up.

### **Grading Scale:**

The grading scale will be as follows:

- A: 90 – 100%
- B+: 85 – 89%,
- B: 80 – 84%,
- C+: 75 – 79,
- C: 65 – 74%,
- D+ Not given as department policy.
- D: 60 – 64%,
- E: 59 and lower.

No minus grades (like B- or C-) will be given. To see the effect of the + and – grades on your GPA, look at the following link: <http://www.registrar.ufl.edu/catalog/policies/regulationgrades.html>.

### **Makeup Exam:**

If a student is unable to take an exam at the scheduled time, they must get in touch with me at least one week prior to the exam for any arrangements to be made for a makeup. Each case will be reviewed individually. Valid and detailed documentation is a prerequisite under such extenuating circumstances. In case of illness, the instructor must be notified before the day of the exam by 4 pm and must receive a medical excuse. There will be one makeup exam given at the end of the semester and it will be cumulative. **No makeup will be given for quizzes.**

### **Course Policies**

Students with disabilities: Students requesting classroom accommodation must first register with the Dean of Students office. The Dean of Students will provide documentation to the students who must then provide this documentation to the Instructor when requesting information.

Academic Dishonesty: I adhere to the University of Florida rules and guidelines for handling instances of academic dishonesty. Please refer to the Office of Students Services for detailed information about the current policies.

Instructor's Honor Code: We the members of the University of Florida community pledge to hold ourselves and our peers to the highest standards of honesty and integrity.

Grading: Grades will be changed only when an error has been made by the instructor.

Incomplete: Incompletes are only assigned when extraordinary circumstances, arising after the date for dropping off the course, prevent the student from completing the course requirements. **The student must be currently passing the course and discuss the circumstances with the instructor before the final exam takes place.** *Having a failing grade in the course is not a valid reason for requesting an incomplete.*

Getting Help: Students may ask question during the lectures (preferred) or the office hours. The teaching assistants will answer questions during their office hours.

### **Tentative schedule:**

Weeks	Dates	Subjects	Sections	Assignments
1	1/07 – 1/11	Descriptive Statistics I	1.1 – 1.2	1.1, 1.2, 1.3, 1.6, 1.8, 1.10,
2	1/14 – 1/18	Descriptive Statistics II	1.3 – 1.5	1.17, 1.20, 1.21, 1.27
3	1/21	<b>Martin Luther King Day (No Classes)</b>		
3	1/22 – 1/25	Probability I	4.1 – 4.5	4.2, 4.3, 4.9, 4.10, 4.16, 4.27, 4.28, 4.31, 4.40, 4.47
4	1/28 – 2/01	Probability II	5.1 – 5.5	5.16, 5.21, 5.22, 5.26, 5.29, 5.31, 5.32, 5.33, 5.36
5 - 6	2/04 – 2/13	The normal distribution	6.1, 6.6	6.1, 6.15, 6.55, 6.56, 6.57, 6.58, 6.61, 6.66, 6.67, 6.68
6	2/15	<b>Test - 1</b>	<b>Sections 1.1 – 1.5, 4.1 – 4.5, 5.3, 6.6</b>	
7	2/18 – 2/22	Sampling distributions	8.1 – 8.6	8. 6, 8.8, 8.9, 8.10, 8.14, 8. 21, 8.23, 8.27, 8.33, 8.47
8	2/25 – 3/01	Quality control	8.7 – 8.8	8.54, 8.55, 8.56, 8.57
9	3/02 – 3/10	<b>Spring Break Please Drive Safely.</b>		
10 - 11	3/11 – 3/20	Inference I	9.1, 9.2, 10.1, 10.2	9.10, 9.11, 9.16, 9.17, 9.29, 10.5, 10.6, 10.13, 10.16, 10.27
11	3/22	<b>Test - 2</b>	<b>Chapter 8, and Sections 9.1, 9.2, 10.1, 10.2</b>	
12	3/25 – 3/29	Inference II	9.3, 10.3	9.35, 9.37, 9.38, 9.47, 9.48, 10.38, 10.40, 10.43, 10.50, 10.60
13	4/01 – 4/05	Chi-square Tests	10.4, Notes	10.65, 10.66, 10.68, 10.69, 10.74 In each problem, identify the type of test used and justify your decision.
14 - 15	4/08 – 4/21	Regression Analysis	11.1 – 11.7	11.1 (with $r = 0.958$ ), 11.39, 11.40, 11.45, 11.67, 11.68, 11.69, 11.70,
16	4/24	<b>Test – 3</b>	<b>Chapters 9, 10 and 11</b>	