STA 3032 Engineering Statistics – Spring 2012

***Prerequisite*: MAC2311**

Meets on MWF at 1:55 in LIT 101

Instructor:

Dr. Yasar Yesilcay (yy@stat.ufl.edu)
Office: Griffin Floyd 101B, **Phone: (**352) 273 – 1839
Office Hours: MWF 3:00 – 4:00 and by appointment
Course Documents at www.stat.ufl.edu/~yy/STA3032

Teaching Assistant:

Long Zhang (longzhang@stat.ufl.edu) in FLO 117 A, Phone 273 - 2974
Office Hours: MR 10:40 – 11:30, F 11:45 – 1:40 and by appointment
Dasgupta Shibasish (dasgupta@stat.ufl.edu) McCarty C 427, Phone 273 – 2004
Office Hours: T 10:40 – 11:30, R 11:45 – 12:35 and by appointment

Course Description:

In this course we will a survey of the basic concepts in probability and statistics with engineering applications. Topics include descriptive statistics, 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) **Text:** Scheaffer, Mulekar and McClave (2011). ***Probability and Statistics for Engineers*, 5th Edition.** [ISBN: 0 – 534 – 40302 – 6].

   [A Note about your textbook: The 5th edition is drastically different from the previous editions, so you cannot substitute them as your textbook. I am sorry to say that its price ($250!) has surprised me but this is the best text I've seen so far. I've checked with the author and the publisher, they suggested e-book as an alternative ($150?) or rental by e-chapter. One student has found the international edition online for $50!

2) **Calculator** capable of calculating means ($\bar{X}$) and standard deviations (S and σ, some calculators show these as σ_{n-1} and σ_n respectively). If your calculator also estimates the intercept (a) and slope (b) in y = a + bX and the correlation coefficient (r) (in simple linear regression) it is much better. DO NOT INVEST TOO MUCH IN ANY FANCY CALCULATOR.

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. You may also download Minitab *free* for 30 days at www.minitab.com. [If you decide to download it, please wait until the assignments are announced.]

Homework:
There will be about **10 problems assigned each week.** (See last page of this document.) These will not be collected. However, **one or more of these questions will be your quiz question of that week.**

Quizzes: There will be **a quiz for 5 - 10 minutes every Friday** (except test weeks), based on the assigned homework questions. Students are expected to have solved them at home and to copy the answers from their notebooks to the quiz paper. YOU MAY NOT HAVE ANOUGH TIME TO SOLVE THE QUESTIONS IN CLASS if you have not already solved them at home. Calculators will not be permitted during the quizzes when the quiz question(s) is/are not modified.

Tests: Three multiple choice tests will be given in class on the dates listed below.
Exam dates are fixed; contents may change depending on what we can cover.

Tests	Dates	Coverage
Test - 1	Friday, 2/23/2012	Chapters 1, 4, 5, 6, 7
Test - 2	Friday, 3/30/2012	Chapters 8, 9, 10
Test - 3	Wednesday, 4/25/2012	Chapters 10.4, 11

Make sure to bring your calculator, pencils, eraser and A PICTURE ID to the tests. You will need to use a calculator in these exams. Make sure you know how to use your calculator. There will be no final exam for this course.

Grades: Grades will be based on the 3 test results (30% each) and the quiz grades (10%). Lowest 2 quiz grades will be deleted. The total points for the whole semester will be **rounded up** before assigning letter grades.

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:	[60 – 64] %	E1: [0 – 59] %.
D+	Not given as department policy.	

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 any question during the lectures (preferred) or during my office hours. The teaching assistant will answer questions during his office hours. A list of private tutors (if needed) may be obtained from the Statistics Department Secretary in Griffin Floyd 103.

Tentative schedule:

Weeks	Dates	Subjects	Sections	Assignments (Solve **WITH REASONS)**
1	1/9 – 1/13	Statistics, Data, Summaries	1.1, 1.2, 1.3	1.1, 1.4, 1.6, 1.8, 1.17
2	1/16	**MARTIN LUTHER KING Day (No classes)**		
	1/18 – 1/20	Numerical and graphical summaries	1.3, 1.4, 1.5	1.29, 1.32, 1.36,
3	1/23 – 1/27	Basic Ideas of Probability	4.1, 4.2, 4.3	4.4, 4.10, 4.14, 4.18, 4.25
4	1/30 – 2/3	Conditional Probability, Random variables	4.4, 4,5, 4.6	4.28, 4.31, 4.44, 4.45, 4.47
5	2/6 – 2/10	Some distributions and Central Limit Theorem	Lecture Notes + Chapters 5 and 6	5.1, 5.2, 5.12, 5.15, 5.21, 5.28, 5.31,5.32,6.55,6.56,
6	2/13 – 2/17	Sampling Distributions and Control Charts	Lecture Notes & Chapter 8	8.4, 8.5, 8.10, 8.16, 8.21, 8.49, 8.52, 8.58, 8.61
7	**2/24**	**Test - 1**	**Chapters 1, 4, 5, 6, 7**	
8	2/27 – 3/2	Inference about population means	9.1, 9.2, 10.1, 10.2	9.10, 9.11, 9.14, 9.21, 10.3, 10.4, 10.13, 10.27
9	**3/3 – 3/11**	**SPRING BREAK (No classes) PLEASE DRIVE SLOWLY**		
9	3/12 – 3/16	Inference about population proportions	9.1, 9.2, 10.1, 10.2	9.16, 9.17, 10.20, 10.29, 10.30
10	3/19 – 3/23	Inference about $\mu_1 - \mu_2$ and $p_1 - p_2$	9.3, 10.1, 10.3,	9.37, 9.38, 9.40, 9.42(a&b) 10.38, 10.41, 10.43, 10.44
11	**3/30**	**Test - 2**	**Chapters 8, 9 and 10 (Except 10.4)**	
12	4/2 – 4/6	Chi-Square Test	10.4	10.65, 10.67, 10.69, 10.71, 10.73
13	4/9 – 4/13	Simple Linear Regression and Correlation	11.1, 11.2, 11.3, 11.4	To be posted on announcement page
14	4/16 – 4/20	Multiple Linear Regression	11.5, 11.9, 11.10	To be posted on announcement page
15	4/23 – 4/27	Multiple Linear Regression	11.5, 11.9, 11.10	To be posted on announcement page
16	**4/25**	**Test – 3**	**Section 10.4 and Chapter 11**	