KING FAHD UNIVERSITY OF PETROLEUM & MINERALS
DEPARTMENT OF MATHEMATICS & STATISTICS
Fall 2012 (Term 131)

STAT211: BUSINESS STATISTICS I

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Office Hours: UTR 10:00 am – 10:50 am & M 10:00 am – 11:00 am

Check Blackboard regularly for announcements

Course Objectives:
Introduce basic concepts of probability and statistics to business students. Emphasize the understanding of the nature of randomness of real world problems, the formulation of statistical methods using intuitive arguments and thereby make meaningful decisions.

***Learning Objectives**:* By completing this course, students should be able to

- **Distinguish** between a *sample* and a *population*
- **Distinguish** between a *statistic* and a *parameter*
- **Design** a business *data collection effort* by using the most appropriate data sampling strategy
- **Classify** business data into the most appropriate *type and measurement levels*
- **Distinguish** between *continuous* and *discrete* data
- **Calculate** *summary descriptive statistics* manually and by MINITAB
- **Interpret** the correct *meaning of summary statistics* for particular real-life business problems
- **Graph** a *correct graphical display* for the correct type of data manually and by MINITAB
- **Interpret** the *correct meaning of graphical display* for a particular real-life business problems
- **Choose** the *correct graphical display* for a particular business decision
- **Choose** the *correct summary statistics* for a particular business application
- **Assess** the correct probability for a particular business application manually and by MINITAB
- **Calculate** the probability for different types of regular business events (marginal, conditional, and joint events) and for updated posterior business events
- **Calculate** expected values of future business events
- **Recognize and use** the correct probability distribution model for a particular business application manually and by MINITAB
- **Distinguish** between *continuous* and *discrete* probability distribution models
- **Distinguish** between *distribution for sample data, distribution for population data, and distribution for sample statistics*
- **Understand** the role of *central limit theorem* in the distribution of sample statistics
- **Evaluate** the *correctness and error levels* of a procedure for estimating a population parameter
- **Design** a business data collection effort by finding the *minimum necessary sample sizes* manually and by MINITAB
- ***Estimate** parameters* of a business population of interest manually and by MINITAB
- **Choose** the most *appropriate statistical procedure* for a particular type and measurement level of business data

Textbook, package and calculator:

1. Basic Business Statistics: Concepts and Applications, 11th edition, by Berenson, M.L., Levine, D.M., and Krehbiel, T.C., Pearson-Prentice Hall (2009).
2. MINITAB (http://www.minitab.com/products/minitab/student/)
3. Students must have their own calculators. Use of mobile phones or other devices are prohibited.

Assessment*

Activity		Weight
Class Work + Lab Work		10% + 5%
First Major Exam (Chapters 1,2 &3)	*Monday September 30, 2013, 6:00PM*	20%
Second Major Exam (Chapters 4 &5)	*Monday October 28, 2013, 5:30PM*	15%
Third Major Exam(Chapters 6 &7)	*Monday November18, 2013 ,5:00PM*	15%
Final Exam (Comprehensive)	*Tuesday December 31, 2013, 8:00AM*	35%

*You need to achieve at least 50% in order to pass the course

Academic Integrity: All KFUPM policies regarding **ethics** and **academic honesty** apply to this course.

Important Notes:

- ✓ Excessive unexcused absences will result in a grade of ***DN*** in accordance with University rules.
- ✓ ***Attendance*** on time is ***very*** important.
- ✓ *A formula sheet* and *statistical tables* will be provided for you in every exam.

Home Work:

- ➢ To successfully learn statistics, students need to solve problems and analyze data. The selected assigned problems are specifically designed to help you understand the material.
- ➢ Homework is due on the first Sunday after completing a chapter**.**
- ➢ No late homework will be accepted, and
- ➢ Don't do like the guy in the cartoon.

"IF I DO MY HOMEWORK, I'LL GET GOOD GRADES. IF I GET GOOD GRADES, YOU'LL SEND ME TO COLLEGE. IF I GO TO COLLEGE, I'LL GRADUATE AND GET A JOB. IF I GET A JOB, I MIGHT GET FIRED. IF I GET FIRED, I COULD GO BANKRUPT AND LOSE EVERYTHING. THAT'S WHY I DIDN'T DO MY HOMEWORK!"

Syllabus

Week	Sections	Topics
Week 1 **1/9 – 5/9**	1.1-1.6	What is Business Statistics, tools for data collection, populations, samples, data Types and measurement levels, type of variables. Business statistics and computer.
Week 2 **8/9 – 12/9**	2.1-2.5	Tables, charts for categorical data. Organizing numerical data. Tables, charts for numerical data. Cross tabulations. Scatter plots and time series plots
Week 3 **15/9 – 19/9**	3.1-3.3	Measures of location and measures of variation.
Week 4 **22/9 – 26/9**	3.4-3.6	Coefficient of variation, empirical rule, Tchebysheff's inequality and standardized data values. Quartiles and the Box plot
Week 5 **29/9 – 3/10**	4.1-4.3	Basic probability concepts. Rules of probability, conditional probability, Bayes theorem
Week 6 **6/10 – 9/10**	5.1-5.4	Probability distribution for discrete random variable, the Binomial distribution. Other discrete distributions (Poisson & Hypergeometric)
		Hajj Vacation
Week 7 **21/10 – 24/10**	5.4-5.5 6.1	Other discrete distributions (Poisson & Hypergeometric) Continuous random variables
Week 8 **27/10 – 31/10**	6.2-6.4	The normal distribution. Other continuous distributions (Exponential & Uniform)
Week 9 **3/11 – 7/11**	6.4-6.7 7.1-7.2	Other continuous distributions (Exponential & Uniform). The normal approximation to the binomial. Sampling methods and sampling error.
Week 10 **10/11 – 14/11**	7.3-7.5	Sampling distributions of the mean and Sampling distributions of the proportion.
Week 11 **17/11 – 21/11**	8.1-8.3	Point and confidence interval estimation of the mean and proportion
Week 12 **24/11 – 28/11**	8.4	Sample size determination for estimating the population mean and proportion.
Week 13 **1/12 – 5/12**	Parts of 10.1-10.2	Estimation of the difference between two population means.
Week 14 **8/12 – 12/12**	Part of 10.3	Estimation of the difference between two population proportions.
Week 15 **15/12 – 24/12**	Part of 10.3	Estimation of the difference between two population proportions