KING FAHD UNIVERSITY OF PETROLEUM & MINERALS
DEPARTMENT OF MATHEMATICS & STATISTICS
DHAHRAN, SAUDI ARABIA

STAT213: STATISTICAL METHODS for ACTUARIES (121)

Course Objectives:
Introduce basic concepts of statistics methods to actuary students. Emphasize the understanding of the nature of randomness of real world problems, the formulation and analysis of real world problems using well known statistical methods to make meaningful decisions.

Textbook and Package:
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. **Scientific calculator with statistical functions**

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Office Hours: SM 9.00 am - 9:50 am and : U 10:00 am – 11:50 am

Assessment
Assessment for this course will be based on quizzes, attendance, homework, lab, two major exams and a comprehensive final exam, as in the following:

Activity	Weight
Quizzes[1], attendance, homework	8%+3%+4%=15%
Lab	15%
Exam 1: (Chapters 1, 2, 3 & 4) *Wednesday October 2, 2012*	15%
Exam 2: (Chapters 5, 6, 7 & 8) *Wednesday November 14, 2012*	15%
Final Exam (Comprehensive) *January1, 2013 , 7pm*	40%

General Notes:
- Students are required to carry **pens**, **note-taking equipment** and a **calculator** with statistical functions to **EVERY lecture, quizzes, and exams**. It is strongly recommended to keep a **binder** for class-notes.
- Students are also expected to take class notes and organize their learning material in a **binder** for easy retrieval to help them in study and review for class, exams, etc
  - It is to the student's advantage to keep a binder for storing class notes, homework, and other graded assignments. Students who are **organized** will find it **easier** to find important materials when **studying for exams**.
- To successfully learn statistics, students need to solve problems and analyze data. The selected assigned problems are specifically designed to prepare you for class quizzes, lab, majors and final exam.
- *Never round* your intermediate results to problems when doing your calculations. This will cause you to lose calculation accuracy. Round only your final answers and you should not round less than 4 decimal places unless required otherwise.
- *A formula sheet* and *statistical tables* will be given for you in every exam, so you only need to bring with you *pens*, *pencils*, *a sharpener*, *an eraser*, and a *calculator*.

Syllabus (Tentative)

Week	Sections	Topics
Week 1 **1/9- 5/9**	2.1-2.5	Presenting data in tables and charts
Week 2 **8/9- 12/9**	3.1-3.3	Numerical descriptive measures
Week 3 **15/9- 19/9**	3.4-3.6	Cont. numerical descriptive measures
Week 4 **22/9- 26/9**	4.1-4.2 5.1	Basic probability The probability distribution for a discrete random variables
Week 5 **29/9- 3/10**	5.3.-5.5 6.1-6.2	The Binomial, Poisson and hyper geometric distributions The normal distribution
Week 6 **6/10- 10/10**	6.3-6.6 7.1-7.2	Other distributions Type of sampling methods
Week 7 **13/10- 17/10**	7.3-7.5	Sampling distributions
18/10 – 2/11 Id Al – Adha vacation		
Week 8 **3/11 - 7/11**	8.1-8.4	Confidence interval estimation
Week 9 **10/11 - 14/11**	9.1-9.4	One sample hypothesis testing
Week 10 **17/11 - 21/11**	10.1-10.3	Two- sample hypothesis testing
Week 11 **24/11 - 28/11**	10.4 12.1-12.3	F test for difference between two variances Chi-Square tests
Week 12 **1/12 - 5/12**	13.1-13.5	Simple linear regression
Week 13 **8/12 - 12/12**	13.7-13.8 14.1-14.2	Cont. Simple linear regression Introduction to multiple regression
Week 14 **15/12 - 19/12**	14.3-14.5 16.1-16.3	Cont. Introduction to multiple regression Time-series and index numbers
Week 15 **22/12 – 26/12**	16.4-16.8	Cont. Time-series and index numbers
Week 16 **29/12**		Normal Sunday class

Important Notes:

- ✓ We will explain the MINITAB commands in the class and the student free to do his homework any were he likes.
- ✓ In accordance with University rules, *NINE unexcused absences* will result in a grade of *DN*.
- ✓ *Attendance* on time is *very* important. Therefore, ½ % will be deduced for *each lateness*. That is, **2 lateness equals to** one absence.
- ✓ Mostly, attendance will be checked within the *first five minutes* of the class. Entering the class after that, is considered as one late, and *every two times late* equals to one absence.

Home Work Problems:

- ➤ Handout problems will be posted on the WebCT or in the instructor home page towards the end of each chapter.
- ➤ The **Homework** should be submitted in the first Saturday after completing the chapter **and no need for an announcement in advance**.
- ➤ No late homework will be accepted.