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

STAT213: STATISTICAL METHODS for ACTUARIES (161)

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, 12th 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: UTR 7:00 am – 7:50 am, UT 10:00 am – 10:50 am or by Appointment

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	10%
Lab	15%
Exam 1: (Chapters 1, 2, 3 & 4) Date: Oct. 13, 2016 from 6:00 PM to 7:30 PM	15%
Exam 2: (Chapters 5, 6, 7 & 8) Date: Nov. 8, 2016 from 6:00 PM to 7:30 PM.	15%
Exam 3: (Chapters 9,10, 12 & 13) Date: Dec. 22, 2016 from 6:00 PM to 7:30 PM.	15%
Final Exam (Comprehensive)	30%

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 **Sep 18 – Sep 22**	2.1-2.5	Presenting data in tables and charts
Week 2 **Sep 25 – Sep 29**	3.1-3.3	Numerical descriptive measures
Week 3 **Oct 2 – Oct 6**	3.4-3.6	Cont. numerical descriptive measures
Week 4 **Oct 9 – Oct 13**	4.1-4.2 5.1	Basic probability The probability distribution for a discrete random variables
Week 5 **Oct 16 – Oct 20**	5.3.-5.5 6.1-6.2	The Binomial, Poisson and hyper geometric distributions The normal distribution
Week 6 **Oct 23 – Oct 27**	6.3-6.6 7.1-7.2	Other distributions Type of sampling methods
Week 7 **Oct 30 – Nov 3**	7.3-7.5	Sampling distributions
Week 8 **Nov 6 – Nov 10**	8.1-8.4	Confidence interval estimation
<td colspan="2" align="center">Mid-Term break 13-17 November</td>		
Week 9 **Nov 20 – Nov 24**	9.1-9.4	One sample hypothesis testing
Week 10 **Nov 27 – Dec 1**	10.1-10.3	Two- sample hypothesis testing
Week 11 **Dec 4 – Dec 8**	10.4 12.1-12.3	F test for difference between two variances Chi-Square tests
Week 12 **Dec 11 – Dec 15**	13.1-13.5	Simple linear regression
Week 13 **Dec 18 – Dec 22**	13.7-13.8 14.1-14.2	Cont. Simple linear regression Introduction to multiple regression
Week 14 **Dec 25 – Dec 29**	14.3-14.5 16.1-16.3	Cont. Introduction to multiple regression Time-series and index numbers
Week 15 **Jan 1 – Jan 5**	16.4-16.8	Cont. Time-series and index numbers
Week 16 **Jan 8**		Normal Thursday classes & Last day of classes for the term

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 deducted 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.