KING FAHD UNIVERSITY OF PETROLEUM & MINERALS
DEPARTMENT OF MATHEMATICS & STATISTICS
(Term 142)

STAT211: BUSINESS STATISTICS I

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Office Hours: UTR 8:00 am – 8:50 am & 11:00 am – 11:50 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		5% + 10%
First Major Exam (Chapters 1,2 &3)	*Monday March 2, 2015*	20%
Second Major Exam (Chapter 4 only)	*Monday March 16, 2015*	10%
Third Major Exam(Chapters 5, 6 &7)	*Monday April 20, 2015*	20%
Final Exam (Comprehensive)	*Monday May 18, 2015, 8:00AM*	35%

Grade Assignment

Score	87 – 100	80 – 86	75 – 79	70 – 74	65 – 69	60 – 64	55 – 59	50 – 54
Grade	A+	A	B+	B	C+	C	D+	D

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 will be online through the Blackboard after completing a chapter**.**
- ➢ You have one week to submit the homework, and
- ➢ Don't do like the guy in the cartoon.

Syllabus

Week	Sections	Topics	Reminders
Week 1 **25/1 – 29/1**	1.1-1.6	What is Business Statistics, tools for data collection, populations, samples, data Types and measurement levels, type of variables.	
Week 2 **1/2 – 5/2**	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	Thursday February 5 ➢ Last day for dropping course(s) without permanent record
Week 3 **8/2 – 12/2**	3.1-3.3	Measures of location and measures of variation.	
Week 4 **15/2– 19/2**	3.4-3.6	Coefficient of variation, empirical rule, Tchebysheff's inequality and standardized data values. Quartiles and the Box plot	
Week 5 **22/2 – 26/2**	4.1	Basic probability concepts. Rules of probability,	➢ **First lab to cover chapter 2 and chapter 3**
Week 6 **1/3 – 5/3**	4.2- 4.3	conditional probability, Bayes theorem	Sunday March 1 ➢ Start of midterm grade reporting, for a period of two weeks. Thursday March 5 ➢ Last day for dropping course(s) with grade of "W" thru Internet
Week 7 **8/3 – 12/3**	5.1-5.4	Probability distribution for discrete random variable, the Binomial distribution. Other discrete distributions (Poisson & Hypergeometric)	
Week 8 **15/3 – 19/3**	5.4-5.5	Other discrete distributions (Poisson & Hypergeometric)	
22/3 – 26/3 Mid Term Vacation			
Week 9 **29/3 – 2/4**	6.1-6.4	Continuous random variables .The normal distribution. Other continuous distributions (Exponential & Uniform)	
Week 10 **5/4 – 9/5**	6.4-6.7 7.1-7.2	Other continuous distributions (Exponential & Uniform). The normal approximation to the binomial. Sampling methods and sampling error.	Thursday April 9 ➢ Last day for withdrawal from all courses with grade of "W" thru the Univ Registrar Office
Week 11 **12/4 –16/4**	7.3-7.5	Sampling distributions of the mean and Sampling distributions of the proportion.	
Week 12 **19/4 – 23/4**	8.1-8.3	Point and confidence interval estimation of the mean and proportion	Sunday April 19 ➢ Beginning of Early Registration (143) and the first semester (151) ➢ Beginning of registration for Coop and Summer Training ➢ **The second lab to cover chapters 5, 6 and 7**
Week 13 **26/4 – 30/4**	8.4	Sample size determination for estimating the population mean and proportion.	
Week 14 **3/5 – 7/5**	Parts of 10.1-10.2	Estimation of the difference between two population means.	Thursday May 7 ➢ Last day for major exams ➢ Last day for withdrawal from all courses with grade of "WP/WF" thru the University Registrar Office
Week 15 **10/5 – 14/5**	Part of 10.3	Estimation of the difference between two population proportions	➢ **The third lab to cover chapters 8 and 10** ➢ **The lab exam (online)**