

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

STAT211: BUSINESS STATISTICS I (143)

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.

Textbook and Package:

1. Business Statistics: A Decision-Making Approach, 7th edition, by Groebner, D., Shannon P., Fry, P. and Smith, K., Prentice Hall (2008).
2. MINITAB (<http://www.minitab.com/products/minitab/student/>)
3. Scientific calculator with statistical functions

Instructor: Esam Al-Sawi
Phone: 1887

Office: B5-310
E-mail: **BB9**

Assessment

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

Activity	Weight
attendance, homework and Lab work	(3%+7%+10%)
Exam 1 (Chapters 1, 2, 3 & 4) WEEK 3	20%
Exam 2 (Chapters 5, 6, & 7) WEEK 5	20%
Final Exam (Comprehensive) Thursday, August 13, 2015; 07:00-10:00 PM.	40%

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. 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.
- 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.

Syllabus (Tentative)

<i>Week</i>	<i>Sections</i>	<i>Topics</i>	<i>Notes</i>
1	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	
June 07-11	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.	
2	3.1–3.4	Measures of location and measures of variation. Coefficient of variation, empirical rule, Tchebysheff's inequality and standardized data values,	
June 14 – 18	3.5	Quartiles and the Box plot	
	4.1	Basic probability concepts	
3	4.2–4.3	Rules of probability, conditional probability, Bayes theorem	
June 21 – 25	5.1–5.3	Probability distribution for discrete random variable, the Binomial distribution	Exam 1
4	5.4–5.5	Other discrete distributions (Poisson & Hypergeometric)	
June 28 – July 2	6.1–6.3	Continuous random variables, the normal distribution	
5	6.4–6.7	Other continuous distributions (Exponential & Uniform) The normal approximation to the binomial	
July 5– 9	7.1–7.2	Sampling methods and sampling error	Exam 2
	July 12-23	Ramadhan Break	
6	7.3–7.5	Sampling distributions of the mean and Sampling distributions of the proportion	
July 26 – 30	8.1–8.4	Point and confidence interval estimation of the mean and proportion	
7	10.1–10.3	Sample size determination for estimating the population mean and proportion Estimation of the difference between two population means	
August 02-06			
8		Review and catch up.	
August 9-11			

Final Exam (Comprehensive): Thursday, August 13, 2015; 07:00-10:00 PM.

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 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** 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 model
- **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