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

STAT211: BUSINESS STATISTICS I (133)

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Office Hours: UMTWR 11:30 AM – 12:30 PM or by appointment.

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**

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.

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
Attendance and Homework	(3%+7%)
Exam 1 (Chapters 1, 2, 3 & 4) Wednesday June 25, 16:00 – 17:30 in 4-150	25%
Exam 2 (Chapters 5, 6 & 7) Wednesday July 16, 16:00 – 17:30 in 4-150	25%
Final Exam (Comprehensive) Wednesday August 13, 19:00	40%

***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:

- 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.

Syllabus (Tentative)

Week	*Sections*	Topics	*Notes*
Week 1 8/6 – 12/6	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	
	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 2 15/6 – 19/6	3.1–3.4	Measures of location and measures of variation. Coefficient of variation, empirical rule, Tchebysheff's inequality and standardized data values,	
	3.5 4.1	Quartiles and the Box plot Basic probability concepts	
Week 3 22/6 – 26/6	4.2–4.3	Rules of probability, conditional probability, Bayes theorem	
	5.1–5.3	Probability distribution for discrete random variable, the Binomial distribution	First major exam: Wednesday June 25, 16:00 – 17:30 in 4-150
Week 4 29/6 – 3/7	5.4–5.5	Other discrete distributions (Poisson & Hypergeometric)	
	6.1–6.3	Continuous random variables, the normal distribution	
Week 5 6/7 – 10/7	6.4–6.7	Other continuous distributions (Exponential & Uniform) The normal approximation to the binomial	
	7.1–7.2	Sampling methods and sampling error	
Week 6 13/7 – 17/7	7.3–7.5	Sampling distributions of the mean and Sampling distributions of the proportion	
	8.1–8.4	Point and confidence interval estimation of the mean and proportion	Second major exam: Wednesday July 16, 16:00 – 17:30 in 4-150
Ramadhan Break 20 July – 3 August			
Week 7 3/8 – 7/8	10.1–10.3	Sample size determination for estimating the population mean and proportion Estimation of the difference between two population means	
Week 8 10/8 – 12/8	Revision	Revision all course	

Final exam Wednesday August 13, 19:00

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