King Fahd University of Petroleum and Minerals
Department of Mathematics and Statistics

STAT-211: Business Statistics I
Summer Semester 2016 (Term 153)

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Office Hours (Tentative): UMT. 10:35 am – 11:45 am, or by appointment

Course Description: 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, 12th edition, by Berenson, M.L., Levine, D.M., and Krehbiel, T.C., Pearson-Prentice Hall (2011).
2. MINITAB (http://www.minitab.com/en-us/products/minitab/)
3. Students must have their own calculators. Use of mobile phones or other devices is prohibited.

Assessment*

Activity	Weight
Class Participation (home works, quizzes, attendance, etc.) + Lab work	15%
First Major Exam (Chapters 1, 2, 3 & 4) Week 3 (Wednesday 27-Jul-16 7:00 pm)	25%
Second Major Exam (Chapters 5, 6, & 7) Week 6 (Monday 15-Aug-16 7:00 pm)	25%
Final Exam (Comprehensive) Week 8 (Tuesday 30-Aug-16 7:00 pm)	35%

Grade Assignment

Score	87 – 100	80 – 86.9	75 – 79.9	70 – 74.9	65 – 69.9	60 – 64.9	55 – 59.9	50 – 54.9	0 – 49.9
Grade	A+	A	B+	B	C+	C	D+	D	F

Academic Integrity: All KFUPM policies regarding **ethics** and **academic honesty** apply to this course.

Important Notes:

- ✓ Only University issued excuses will be accepted and only within a week of return to class.
- ✓ Excessive unexcused absences will result in a grade of ***DN*** in accordance with University rules.
- ✓ ***Attendance*** on time is ***very*** important.
- ✓ Use of ***mobile*** is ***banned*** during the class.
- ✓ Check ***Blackboard*** regularly for announcements.
- ✓ ***Homeworks*** will be assigned later.
- ✓ Quizzes may ***not*** be announced in advanced.

Your Responsibilities:

- ✓ Observe the academic calendar for important dates
- ✓ Taking all exams.
- ✓ Attending all lectures.
- ✓ Completing all homework problems posted on the Blackboard.
- ✓ Reading all my e-mails in a timely manner, i.e. check your e-mail every day.
- ✓ Asking for help when you need it and not waiting until the end of the semester.
- ✓ Practice active learning instead of waiting until the day before an exam to attempt to learn the material.

Syllabus

Week	Sections	Topics	Reminders
Week 1 **11/7 – 14/7 16/7**	1.1-1.6 2.1-2.6	What is Business Statistics, tools for data collection, populations, samples, data Types and measurement levels, type of variables. Tables, charts for categorical data. Organizing numerical data. Tables, charts for numerical data. Cross tabulations. Scatter plots and time series plots	
Week 2 **17/7 – 21/7**	3.1-3.6	Measures of location and measures of variation. Coefficient of variation, empirical rule, Chebyshev's inequality and standardized data values. Quartiles and the Box plot	**First lab chapter 2 and chapter 3**
Week 3 **24/7 – 28/7**	4.1- 4.3	Basic probability concepts. Rules of probability, conditional probability, Bayes theorem	**Exam 1**
Week 4 **31/7 – 04/8**	5.1-5.5	Probability distribution for discrete random variable, the Binomial distribution. Other discrete distributions (Poisson & Hypergeometric)	
Week 5 **07/8 – 11/8**	6.1-6.6 7.1-7.2	Continuous random variables .The normal distribution. Other continuous distributions (Exponential & Uniform) The normal approximation to the binomial. Sampling methods and sampling error.	
Week 6 **14/8 –18/8**	7.3-7.5 8.1-8.4	Sampling distributions of the mean and Sampling distributions of the proportion. Point and confidence interval estimation of the mean and proportion. Sample size determination for estimating the population mean and proportion.	**The second lab to cover chapters 5, 6 and 7** **Exam 2**
Week 7 **21/8 – 25/8**	Parts of 10.1-10.3	Estimation of the difference between two population means. Estimation of the difference between two population proportions	**The third lab to cover chapters 8 and 10** **The lab exam (online)**
Week 8 **28/8 – 29/8**		Review and Catchup	