KING FAHD UNIVERSITY OF PETROLEUM & MINERALS
DEPARTMENT OF MATHEMATICS & STATISTICS
(Term 172)

STAT211: BUSINESS STATISTICS I

Instructor: Mohammad F. Saleh

Office: 5-312 **Phone:** 4410 **Email**: mohfarah@kfupm.edu.sa

Office Hours: UTR 10:00 – 11:00 am or by appointment

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*
- **Choose** the most *appropriate statistical procedure* for a particular type and measurement level of business data
- **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
- **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
- **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

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 (2012).
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
Quizzes	10%
Home Work & Lab Work	5%, each
First Major Exam (Chapters 1, 2, 3 & 4) ***Monday 05 March 2018***	20%
Second Major Exam (Chapters 5, 6 &7) ***Monday 16 April 2018***	20%
Final Exam (Comprehensive)	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.
- ✓ *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 is due in class on the first Sunday after completing a chapter., and
- ➢ Don't do like the guy in the cartoon.

Syllabus

Week	Sections	Topics	Reminders
Week 1 **21/01 – 25/01**	1.1 1.2 1.3 1.4	Why Learn Statistics. Statistics in Business. Basic Vocabulary of Statistics. Identifying Types of Variables.	
Week 2 **28/01 – 01/02**	2.2 2.3 2.4 2.5 2.6	Organizing Categorical Data. Organizing Numerical Data. Visualizing Categorical Data. Visualizing Numerical Data. Visualizing Two Numerical Data.	1st Feb. ➢ Last day for dropping course(s) without permanent record
Week 3 **04/02 – 08/02**	3.1 3.2	Central Tendency. Variation and Shape.	
Week 4 **11/02 – 15/02**	3.3 3.4	Exploring Numerical Data. Numerical Descriptive Measures for a Population	
Week 5 **18/02 – 22/02**	4.1 4.2	Basic probability concepts Conditional Probability	➢ **First lab to cover chapter 2 and chapter 3**
Week 6 **25/02 – 01/03**	4.3	Bayes' Theorem	25th Feb. ➢ Start of midterm grade reporting, for a period of two weeks. 1st March ➢ Last day for dropping course(s) with grade of "W" thru Internet
Week 7 **04/03 – 08/03**	5.1 5.3	Probability distribution for discrete random variable, Binomial distribution.	***First Major Exam***
Week 8 **11/03 – 15/03**	5.4 5.5	Poisson Distribution Hypergeometric Distribution	
Week 9 **18/03 – 22/03**	6.1 6.2 6.4	Continuous Probability distributions. Normal distribution. Uniform Distribution.	
Week 10 **25/03 – 29/03**	6.5 6.6 7.1	Exponential Distribution Normal Approximation to the Binomial. Types of Sampling Methods	29th March ➢ Last day for withdrawal from all courses with grade of "W" thru the Univ. Registrar Office
Week 11 **01/04 – 05/04**	7.3 7.4 7.5	Sampling Distributions. Sampling Distribution of the Mean Sampling Distribution of the Proportion.	
Week 12 **08/04 – 12/04**	8.1 8.2	Confidence interval Estimate of the Mean (σ known) Confidence interval Estimate of the Mean (σ unknown)	➢ **The second lab to cover chapters 5, 6 and 7**
Week 13 **15/04 – 19/04**	8.3 8.4	Confidence interval Estimate for the Proportion Determining Sample Size.	***First Major Exam***
Week 14 **22/04 – 26/04**	10.1 10.2	Confidence interval Estimate for the Difference Between Two means Confidence interval Estimate for the Mean Difference.	26th April ➢ Last day for major exams ➢ Last day for withdrawal from all courses with grade of "WP/WF" thru the University Registrar Office
Week 15 **29/04 – 03/05**	10.3	Confidence interval Estimate for the Difference Between Two Proportions	➢ **The third lab to cover chapters 8 and 10** ➢ **The lab exam (online)**

Homework Problems

Chapter 1: 1.1, 1.5, 1.7, 1.11, 1.25, 1.27
Chapter 2: 2.5, 2.11, 2.20, 2.22, 2.24, 2.27, 2.37, 2.39, 2.44, 2.46
Chapter 3: 3.3, 3.4, 3.8, 3.13, 3.23, 3.28 3.33, 3.39, 3.40, 3.63
Chapter 4: 4.3, 4.8, 4.14, 4.17, 4.19, 4.23, 4.31, 4.37, 4.61
Chapter 5: 5.1, 5.3, 5.19, 5.23, 5.24, 5.30, 5.33, 5.42, 5.43
Chapter 6: 6.1, 6.5, 6.6, 6.9, 6.23, 6.29, 6.33, 6.51
Chapter 7: 7.18, 7.19, 7.20, 7.21, 7.25, 7.27, 7.45
Chapter 8: 8.1, 8.5, 8.9, 8.11, 8.12, 8.17, 8.23, 8.26, 8.30, 8.32, 8.38, 8.43, 8.48, 8.68
Chapter 10: 10.12 (c), 10.14 (d), 10.20 (d), 1023 (d)), 10.29 (c & d)