

King Fahd University of Petroleum and Minerals  
 Mathematics Department  
 Dhahran, Saudi Arabia  
**STAT212: Business Statistics II (Term 222)**

**Instructor:**  
**Phone:**  
**Office Hours:**

**Office:**  
**E-mail:**

**Course Objectives:** Introducing basic concepts of probability and statistics to business students. Emphasis will be given on the understanding of the nature of randomness of real-world problems, the formulation of statistical methods by using intuitive arguments and thereby making meaningful decisions

**Learning Outcomes:** By completing this course, students should

- Know the correspondence between levels of measurement and statistical procedures.
- Know the assumptions underlying statistical procedures.
- Select the appropriate statistical procedure for various applied business situations.
- Accurately compute procedures manually and by *MINITAB* and interpret the results of these statistical procedures.
- Finally, make the right decision.

**Textbook and Statistical Package:**

- Basic Business Statistics: Concepts and Applications, 12th edition, by Berenson, M.L., Levine, D.M., and Krehbiel, T.C., Pearson-Prentice Hall (2012).
- MINITAB Statistical Package will be used.
- Scientific calculator with statistical functions in every class, quiz and exam.

**Assessment\***

<b>Activity</b>	<b>Weight</b>
Homework (online) and Class Evaluation	10% (40 points)
Quizzes (The average total grade of the quizzes of each section shall be in the interval [28, 30], i.e., [70%, 75%] of 40 points).	10% (40 points)
Major Exam 1: Chapters 9, 10 & Section 12.5. <b>DATE: TBAL</b>	25% (100 points)
Major Exam 2: Chapters 12, 13. <b>DATE: TBAL</b>	25% (100 points)
Final Exam (Comprehensive). <b>FOLLOW THE REGISTRAR FINAL SCHEDULE ON THE WEBPAGE.</b>	30% (120 points)

**MINITAB:** All MINITAB commands and procedures will be explained in the class and the student are expected to practice them during and after the class.

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

### Weekly Schedule (*Tentative*)

<i>Week</i>	<i>Sections &amp; Topics</i>	<i>Notes</i>
Week 1 15/1 - 19/1	9.1 Fundamentals of Hypothesis-Testing Methodology 9.2 T-Test of Hypothesis for the Mean ( $\sigma$ Unknown)	
Week 2 22/1 - 26/1	9.3 One-Tail Tests 9.4 Z Test of Hypothesis for the Proportion	
Week 3 29/1 - 02/2	12.5 Chi-Square Test for the Variance or Standard Deviation 10.1 Comparing the Means of Two Independent Populations 10.2 Comparing the Means of Two Related Populations	
Week 4 05/2 - 09/2	10.3 Comparing the Proportions of Two Indep. Populations 10.4 F Test for the Ratio of Two Variances 12.1 Chi-Square Test for the Difference Between Two Proportions	
Week 5 12/2 - 16/2	12.2 Chi-Square Test for Differences Among More Than Two Proportions 12.3 Chi-Square Test of Independence 12.4 McNemar Test for the Difference Between Two Proportions (Related Samples)	
Week 6 19/2 - 21/2	13.1 Types of Regression Models 13.2 Determining the Simple Linear Regression Equation 13.3 Measures of Variation	
22/2 - 23/2	<b>Saudi Founding Day</b>	
Week 7 26/2 - 02/3	13.4 Assumptions 13.5 Residual Analysis 13.6 Measuring Autocorrelation: The Durbin-Watson Statistic	
Week 8 05/3 - 09/3	13.7 Inferences About the Slope and Correlation Coefficient 13.8 Estimation of Mean Values and Prediction of Individual Values 13.9 Pitfalls in Regression	
Week 9 12/3 - 16/3	14.1 Developing a Multiple Regression Model 14.2 $R^2$ , Adjusted $R^2$ , and the Overall F Test 14.3 Residual Analysis for the Multiple Regression Model	
Week 10 19/3 - 23/3	14.4 Inferences Concerning the Population Regression Coefficients 14.5 Testing Portions of the Multiple Regression Model 14.6 Using Dummy Variables and Interaction Terms in Reg. Models	
Week 11 26/3 - 30/3	15.1 The Quadratic Regression Model 15.3 Collinearity 15.4 Model Building	
Week 12 02/4 - 06/4	15.6 Aptness of the model 16.1 The Importance of Business Forecasting 16.2 Component Factors of Time-Series Models	
Week 13 09/4 - 13/4	16.3 Smoothing an Annual Time Series 16.4 Least-Squares Trend Fitting and Forecasting 16.5 Autoregressive Modeling for Trend Fitting and Forecasting	
16/4 - 27/4	<b>Ramadhan break &amp; Eid Al-Fitr holidays</b>	
Week 14 30/4 - 4/5	16.6 Choosing an Appropriate Forecasting Model 16.7 Time-Series Forecasting of Seasonal Data	
Week 15 07/5 - 11/5	16.8 Online Topic: Index Numbers	
Week 16 14/5 15/5 16/5	Normal Wednesday Class Normal Thursday Class (last day of classes) Exam preparation break	

### The usage of mobile phones and smart watches

- Students are not allowed to use mobiles for any purpose during class time.
- Students who want to use electronic devices to take notes must take permission from their instructor.
- Violations of these rules will result in a penalty decided by the instructor.
- Academic Integrity: All KFUPM policies regarding ethics apply to this course. See the Undergraduate Bulletin.

### Important Rules

- 1- Students are not allowed to enter the exam hall without either KFUPM ID or Saudi ID/ Iqama ID.
- 2- Students must take the exam in the place assigned to them.
- 3- Students are not allowed to carry mobiles, smart watches, or electronic devices to the exam halls/rooms.
- 4- Violations of these rules will result in a penalty decided by the chairman of Math Department.

### Cheating in Exams

Cheating or any attempt of cheating by use of illegal activities, techniques and forms of fraud will result in a grade of **F** in the course along with reporting the incident to the higher university administration for further action. Cheating in exams includes (but is not restricted to):

- looking at the papers of other students
- talking to other students
- using mobiles or any other electronic devices.

### Missing an Exam

In case a student misses an exam (Exam I, Exam II, or the Final Exam) for a legitimate reason (such as medical emergencies), he/she must bring an official excuse from Students Affairs. Otherwise, he/she will get zero in the missed exam.

### Attendance

- Students need to strictly adhere to the attendance policy of the university.
- If a student misses a class, he/she is responsible for any announcement made in that class.
- A DN grade will be assigned to any student who accumulates more than 20% unexcused absences (9 lectures) or 33% excused and unexcused absences (15 lectures).
- DN-Grade will be assigned to the eligible students after their instructors have

warned them twice.

**Note:** Absences are counted as follows:

1. For UTR-Lectures, missing one lecture is counted as 1 absence.
2. For UTR-Lectures, coming LATE to the lecture twice is counted as 1 absence.

*Suggested Practice Problems:*

**Chapter 9:** 9.4, 9.13, 9.21, 9.28, 9.45, 9.50, 9.54, 9.56, 9.76

**Chapter 10:** 10.6, 10.10, 10.12, 10.18, 10.21, 10.27, 10.35, 10.44, 10.46, 10.50

**Chapter 12:** 12.4, 12.9, 12.13, 12.21, 12.26, 12.27, 12.32, 12.39, 12.45

**Chapter 13:** 13.3, 13.9, 13.15, 13.21, 13.24, 13.29, 13.33, 13.37, 13.41, 13.47, 13.55,  
13.61

**Chapter 14:** 14.1, 14.4, 14.9, 14.14, 14.18, 14.23, 14.26, 14.31, 14.34, 14.38, 14.41, 14.44

**Chapter 15:** 15.1, 15.6, 15.8, 15.13, 15.14, 15.16, 15.21, 15.25

Tips on how to enhance your problem-solving abilities

- Do all homework assignments on time.
- Practice (but not memorize) more problems than those in the above list.
- Solve review problems available at the end of each chapter.
- Solve the problems on your own before reading the solution or asking for help.
- If you find it difficult to handle a certain type of problems, you should try more problems of the same type.
- Practicing homework problems and reviewing the class lectures will make exam problems easier to tackle.
- Try to make good use of the office hours of your instructor. Always bring partial solutions of the questions that you want to discuss with your instructor.