King Fahd University of Petroleum and Minerals
Mathematics Department
Dhahran, Saudi Arabia
STAT212: Business Statistics II (Term 221**)**
Coordinator: Raid Anabosi

Instructor: **Office:**
Phone: **E-mail:**
Office Hours:

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*

Activity	Weight
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. **Major 1: October 4**	25% (100 points)
Major Exam 1: Chapters 12, 13. **Major 2: November 8**	25% (100 points)
Final Exam (Comprehensive).	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*)

Week	Sections & Topics	Notes
Week 1 28/8 – 01/9	9.1 Fundamentals of Hypothesis-Testing Methodology 9.2 T-Test of Hypothesis for the Mean (σ Unknown)	
Week 2 04/9 – 08/9	9.3 One-Tail Tests 9.4 Z Test of Hypothesis for the Proportion	
Week 3 11/9 – 15/9	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 18/9 – 21/9	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	National Day Thursday 22/9
Week 5 25/9 – 29/9	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 02/10 – 06/10	13.1 Types of Regression Models 13.2 Determining the Simple Linear Regression Equation 13.3 Measures of Variation	
Week 7 09/10 – 13/10	13.4 Assumptions 13.5 Residual Analysis 13.6 Measuring Autocorrelation: The Durbin-Watson Statistic	
Week 8 16/10 – 20/10	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 23/10 – 27/10	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 30/10 – 03/11	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 Regression Models	
Week 11 06/11 – 10/11	15.1 The Quadratic Regression Model 15.3 Collinearity 15.4 Model Building	Major 2 – Nov 9 (7:00 – 8:00) B-57
Week 12 13/11 – 17/11	15.6 Aptness of the model 16.1 The Importance of Business Forecasting 16.2 Component Factors of Time-Series Models	
Week 13 20/11 – 24/11	16.3 Smoothing an Annual Time Series 16.4 Least-Squares Trend Fitting and Forecasting 16.5 Autoregressive Modeling for Trend Fitting and Forecasting	
27/11 – 01/12	**Midterm Break**	
Week 14 04/12 – 08/12	16.6 Choosing an Appropriate Forecasting Model 16.7 Time-Series Forecasting of Seasonal Data	
Week 15 11/12 – 15/12	16.8 Online Topic: Index Numbers	
Week 16 18/12 – 20/12	18/12 : Normal Thursday 19/12 & 20/12 : 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.