

King Fahd University of Petroleum and Minerals
 Department of Mathematics
 Dhahran, Saudi Arabia
STAT-212: Business Statistics II (Term 223)

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Office Hours: UMTW 11:00 am – 12:00 noon

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 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 <i>Major 1, 13th July</i>	25% (100 points)
Major Exam 1: Chapters 12, 13, <i>Major 2, 30th July</i>	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

WEEK	Topics
Week 1 June 11 – 15	Ch 9: Fundamentals of Hypothesis Testing: One-Sample Tests 9.1 Fundamentals of Hypothesis-Testing Methodology 9.2 t Test of Hypothesis for the Mean (σ Unknown) 9.3 One-Tail Tests 9.4 Z Test of Hypothesis for the Proportion 12.5 Chi-Square Test for the Variance or Standard Deviation
Week 2 June 18 – 22	Ch 10: Two-Sample Tests 10.1 Comparing the Means of Two Independent Populations 10.2 Comparing the Means of Two Related Populations 10.3 Comparing the Proportions of Two Independent Populations 10.4 F Test for the Ratio of Two Variances
Week 3 July 09 – 13	Ch 12: Chi-Square Tests and Nonparametric Tests 12.1 Chi-Square Test for the Difference Between Two Proportions 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 4 July 16 – 20	Ch 13: Simple Linear Regression 13.1 Types of Regression Models 13.2 Determining the Simple Linear Regression Equation 13.3 Measures of Variation 13.4 Assumptions 13.5 Residual Analysis 13.6 Measuring Autocorrelation: The Durbin-Watson Statistic 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 5 July 23 – 27	Ch 14: Introduction to Multiple Regression 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 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 Ch 15: Multiple Regression Model Building 15.1 The Quadratic Regression Model
Week 6 July 30 – Aug 03	15.2 Using Transformations in Regression Models 15.3 Collinearity 15.4 Model Building 15.5 Pitfalls in Multiple Ch 16: Time-Series Forecasting 16.1 The Importance of Business Forecasting 16.2 Component Factors of Time-Series Models
Week 7 Aug 6 – 10	16.3 Smoothing an Annual Time Series 16.4 Least-Squares Trend Fitting and Forecasting 16.5 Autoregressive Modeling for Trend Fitting and Forecasting 16.6 Choosing an Appropriate Forecasting Model 16.7 Time-Series Forecasting of Seasonal Data 16.8 Online Topic: Index Numbers
Week 8 Aug 13 – 14	REVIEW

The usage of mobile phones and apple 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.
- **Students are not allowed to carry mobile phones and apple watches to the exam halls.**

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 must bring an official excuse from Students Affairs. Otherwise, he will get zero in the missed exam.

Attendance:

Students are expected to attend all lecture classes.

- If a student misses a class, he is responsible for any announcement made in that class.
- A DN grade will be awarded to any student who accumulates more than 20% unexcused absences (7 lectures) or 33% excused and unexcused absences (12 lectures)

Note: Absences are counted as follows:

For UTR-Lectures, missing one lecture is counted as 1 absence.

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.