

King Fahd University of Petroleum and Minerals
Department of Mathematics and Statistics
Dhahran, Saudi Arabia
STAT-212: Business Statistics II (Term 193)

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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
Classwork (homework, quizzes, attendance, participation, etc.) + Lab work	15% + 10%
Assessment # 1 (Chapter 9) <i>Tuesday 9th June 2020, 7:00 PM</i>	8%
Assessment # 2 (Chapter 10) <i>Tuesday 16th June 2020, 7:00 PM</i>	9%
Assessment # 3 (Chapter 12) <i>Tuesday 23th June 2020, 7:00 PM</i>	9%
Assessment # 4 (Chapter 13) <i>Tuesday 30th June 2020, 7:00 PM</i>	10%
Assessment # 5 (Chapter 14) <i>Tuesday 7th July 2020, 7:00 PM</i>	9%
Assessment # 6 (Chapter 15) <i>Saturday 11th July 2020, 7:00 PM</i>	7%
Assessment # 7 (Chapter 16 excluding 16.7 and 16.8) <i>Tuesday 14th July 2020, 7:00 PM</i>	8%
Final Assessment (Comprehensive)	15%

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

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 problems and due date of their submission will be posted on Blackboard later.
- No late homework will be accepted.

Important Notes:

Virtual Class: All the classes will be held on Microsoft Teams. Before the start of semester, all registered students will be given access (with your KFUPM email ID) to a team corresponding to their section. It is student's responsibility to install Microsoft Teams and keep it ready to use before the start of every class.

Internet Connection: You are required to have an excellent internet connection for attending virtual classes and attempting assessments. No makeup exams or attendance excuses will be given based on internet connection failure.

Webcam: You are required to have a computer with webcam. During all assessments, you must keep your webcam turned on and the proctor will monitor you time to time.

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.

DN: In accordance with the university rules, six (06) unexcused absences will result in a grade of **DN**.

Attendance: Every class there will be at least one short pop-up quiz. The quiz will cover the material of ongoing or pervious class. Any student who misses the quiz will be considered absent from the class.

Excuse: Only an excuse issued by *Deanship of Student Affairs* will be accepted for not attending a class, a quiz or an exam.

Blackboard: All contacts or announcements between the instructor and the students are supposed to be through Blackboard, so the student must check his Blackboard at least once a day.

Quizzes and Assessments: All the quizzes and assessments are open book. You can make use of your notes, book and statistical tables during the exam. The quizzes and assessments will be conducted on Blackboard under *Assessments / Tests* section.

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

Cheating and Plagiarism: This course is composed of individual assignments. It is important that your individual assignment be completed with your own efforts instead of copying it from your fellow student. KFUPM instructors follow "*zero tolerance*" approach with regard to cheating and plagiarism. During examinations (quizzes, major exams, lab tests) 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.

General Notes:

- Students are also expected to take class notes and organize their learning material in a binder for easy retrieval to help them in study and review for class, exams, etc. It is to the student's advantage to keep a binder for storing class notes, homework, and other graded assignments. Students who are organized will find it easier to find important materials when studying for exams.
- To effectively learn statistics, students need to *solve problems* and *analyze data*. The selected assigned problems are specifically designed to prepare you for class quizzes, lab, majors and final exam. So, it is expected that you complete these problems *step-by-step* and with *comprehension*.
- For all exams, quizzes and homework questions, round only your final answers and you should not round less than 4 decimal places unless required otherwise.

Weekly Schedule

WEEK	Topics
Week 1 May 31 - June 04	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
Week 2 June 07 - 11	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 June 14 - 18	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) 12.5 Chi-Square Test for the Variance or Standard Deviation
Week 4 June 21 - 25	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 June 28 - July 02	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 05 - 09	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 July 12 - 16	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 July 19	REVIEW