

**King Fahd University of Petroleum and Minerals**  
**Department of Mathematics and Statistics**  
**Dhahran, Saudi Arabia**  
**STAT-212: Business Statistics II** (Term 182)

**Instructor:** Dr. Nasir Abbas

**Phone:** 013 - 860 4485

**Office Hours:** 12:05 pm – 01:25 pm UTR (Tentative)

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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	10% + 10%
First Major Exam (Chapters 9, 10 and 12) <i>Date and Time: Week 7, Monday, 18<sup>th</sup> February, 2019</i>	25%
Second Major Exam (Chapters 13, 14 and 15) <i>Date and Time: Week 13, Monday, 1<sup>st</sup> April, 2019</i>	25%
Final Exam (Comprehensive) <i>Date and Time: As per University Schedule</i>	30%

**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:

**Calculator:** Students will be required to carry a scientific calculator with statistical functions to every class, quiz and exam.

**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, nine (9) unexcused absences will result in a grade of **DN**. It is students' responsibility to provide valid written excuses on time before a **DN** report is issued.

**Attendance:** Attendance on time is very important. Therefore, ½ % will be reduced for each unexcused absence.

**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:** In general, there will be a quiz at the end of every chapter.

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

**Mobile and Electronic Devices:** Students are not allowed to use mobiles or electronic devices for any purpose during the class. A prior permission from the instructor is required for those who intend to use for taking notes. Violations of these rules will result in a *penalty in student's classwork grade*.

**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 required to carry a **pen**, a **binder** and a **calculator** with statistical functions to **EVERY** lecture, quiz, and exam.
- 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.
- **A formula sheet and statistical tables** will be given to you in every exam, so you only need to bring with you pens, pencils, a sharpener, an eraser, and a calculator.

## Weekly Schedule

WEEK	Topics
<b>Week 1</b> January 06 - 10	<b>Ch 9: Fundamentals of Hypothesis Testing: One-Sample Tests</b> 9.1 Fundamentals of Hypothesis-Testing Methodology 9.2 t Test of Hypothesis for the Mean ( $\sigma$ Unknown)
<b>Week 2</b> January 13 - 17	9.3 One-Tail Tests 9.4 Z Test of Hypothesis for the Proportion
<b>Week 3</b> January 20 - 24	<b>Ch 10: Two-Sample Tests</b> 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
<b>Week 4</b> January 27 - 31	10.4 F Test for the Ratio of Two Variances <b>Ch 12: Chi-Square Tests and Nonparametric Tests</b> 12.1 Chi-Square Test for the Difference Between Two Proportions 12.2 Chi-Square Test for Differences Among More Than Two Proportions
<b>Week 5</b> February 03-07	12.3 Chi-Square Test of Independence 12.4 McNemar Test for the Difference Between Two Proportions (Related Samples)
<b>Week 6</b> February 10 - 14	12.5 Chi-Square Test for the Variance or Standard Deviation <b>Ch 13: Simple Linear Regression</b> 13.1 Types of Regression Models
<b>Week 7</b> February 17 - 21	13.2 Determining the Simple Linear Regression Equation 13.3 Measures of Variation 13.4 Assumptions 13.5 Residual Analysis
<b>Week 8</b> February 24 - 28	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
<b>Week 9</b> March 03 - 07	<b>Ch 14: Introduction to Multiple Regression</b> 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
<b>Week 10</b> March 10 - 14	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
<b>Week 11</b> March 17 - 21	<b>Ch 15: Multiple Regression Model Building</b> 15.1 The Quadratic Regression Model 15.3 Collinearity
<b>Week 12</b> March 24 - 28	15.4 Model Building 15.5 Pitfalls in Multiple <b>Ch 16: Time-Series Forecasting</b> 16.1 The Importance of Business Forecasting 16.2 Component Factors of Time-Series Models
<b>Week 13</b> March 31 - April 04	16.3 Smoothing an Annual Time Series 16.4 Least-Squares Trend Fitting and Forecasting 16.5 Autoregressive Modeling for Trend Fitting and Forecasting
<b>Week 14</b> April 07 - 11	16.6 Choosing an Appropriate Forecasting Model 16.7 Time-Series Forecasting of Seasonal Data
<b>Week 15</b> April 14 - 18	16.8 Online Topic: Index Numbers  <b>REVIEW</b>