

King Fahd University of Petroleum and Minerals
 Department of Mathematics
 Dhahran, Saudi Arabia
STAT-201: Introduction to Statistics (Term 211)

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Course Objectives: STAT201 “*Introduction to Statistics*” is intended to be the first course in statistics for students. The emphasis is on understanding how to use statistics to solve real-world problems. Upon completion of this course you should:

- Be familiar with the techniques of data analysis studied;
- Understand the basic elements of probability studied;
- Understand the assumptions, methods, and implications associated with various methods of statistical inference studied; and
- Be proficient in using MINITAB and be able to interpret the associated output.

Textbook: *Introductory Statistics* by Sheldon, M. Ross. 4th edition, Elsevier, 2017.

Software Package: MINITAB

Assessment*

Activity	Weight
Class Participation (home works, quizzes, attendance, participation, etc.)	10%
Lab Tests	10%
First Major Exam	20%
Second Major Exam	25%
Final Exam <i>(Comprehensive)</i>	35%

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 and major 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.

Important Notes:

- ✓ Only University issued excuses will be accepted.
- ✓ **Attendance** on time is *very* important.
- ✓ Use of **mobile** is *banned* during the class.
- ✓ **Homework** problems will be assigned later.

Weekly Schedule

Date	Section	Topics (Tentative)
Week 1	Chapter 1 <i>Sections 1.1-1.3</i>	Chapter 1: INTRODUCTION TO STATISTICS Introduction, the nature of statistics, populations and samples
Week 2	Chapter 2 <i>Sections 2.1-2.5</i> Chapter 3 <i>Sections 3.1-3.4</i>	Chapter 2: DESCRIBING DATA SETS Introduction, frequency tables & graphs, histograms, stem-&-leaf plot, sets paired data. Chapter 3: USING STATISTICS TO SUMMARIZE DATA SETS Mean, median, and mode.
Week 3	Chapter 3 <i>Sections 3.5-3.7</i> Chapter 4 <i>Sections 4.1-4.2</i>	Variance & standard deviation, empirical rule and sample correlation coefficient. Chapter 4: PROBABILITY Sample space and events.
Week 4	Chapter 4 <i>Sections 4.3-4.5</i>	Properties of probability, equally likely outcomes, conditional probability and independence
Week 5	Chapter 5 <i>Sections 5.1-5.4</i>	Chapter 5: DISCRETE RANDOM VARIABLES Random variable and expected value and variance.
Week 6	Chapter 5 <i>Sections 5.6</i> Chapter 6 <i>Section 6.1-6.2</i>	Binomial random variable Chapter 6: NORMAL RANDOM VARIABLES Continuous random variables
Week 7	Chapter 6 <i>Sections 6.3-6.4</i>	Normal random variables and probabilities associated with a standard normal random variable
Week 8	Chapter 6 <i>Sections 6.5-6.7</i>	Finding normal probabilities, additive property of normal random variables and percentiles of normal random variables.

Week 9	Chapter 7 <i>Sections 7.1-7.5</i>	Chapter 7: DISTRIBUTIONS OF SAMPLING STATISTICS Sample mean, central limit theorem and sampling proportions from a finite population.
Week 10	Chapter 8 <i>Sections 8.1-8.6</i>	Chapter 8: ESTIMATION Point estimates of population mean, proportion & variance and interval estimates of mean
Week 11	Chapter 8 <i>Sections 8.7</i> Chapter 9 <i>Sections 9.1-9.2</i>	Interval Estimators of a Population Proportion Chapter 9: TESTING STATISTICAL HYPOTHESES Hypotheses tests and significance levels.
Week 12	Chapter 9 <i>Sections 9.3-9.5</i>	Hypotheses tests for mean and proportion
Week 13	Chapter 10 <i>Sections 10.1-10.4</i>	Chapter 10: HYPOTHESIS TESTS CONCERNING TWO POPULATIONS Testing equality of means: Large and small sample
Week 14	Chapter 12 <i>Sections 12.1-12.5</i>	Chapter 12: LINEAR REGRESSION Simple linear regression model, estimating the regression parameters, error random variable and testing the hypothesis about slope
Week 15	Chapter 12 <i>Sections 12.6-12.9</i>	Coefficient of determination and correlation coefficient Review and catchup.