

KING FAHD UNIVERSITY OF PETROLEUM & MINERALS
DEPARTMENT OF MATHEMATICS & STATISTICS
DHAHRAN, SAUDI ARABIA
STAT201: STATISTICAL METHODS
Course Outline, Semester 141

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Office Hours: STR: 9:00 – 9:50 AM and 12:15 – 1:05 PM.

Text and Package:

- (1) Introductory Statistics by Ross, S. H., 3rd edition, Elsevier, 2010.
- (2) **MINITAB** version 16.1.

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.

Assessment

Assessment for this course will be based upon homework, class work, attendance, lab, three major exams and final exam (comprehensive), with the following weighting:

Activities	Weight
Homework, attendance, and participation	10%
Exam 1 (Chapters 1, 2, 3 and 4) on Wednesday October 15, 2014 at 18:00	15%
Exam 2 (Chapters 5 and 6) on Wednesday November 5, 2014 at 17:30	15%
Exam 3 (Chapters 7, 8, 9, and 10) on Wednesday December 3, 2014 at 17:30	20%
Lab exam on Thursday December 25, 2014	10%
Final exam (comprehensive) on Tuesday December 30, 2014 at 7:00 PM	30%

Syllabus at a Glance

<i>Week</i>	<i>Section</i>	<i>Topics</i>	<i>Reminder</i>
Week 1 31/8 – 4/9	1.1 -1.3	Introduction, the nature of statistics, populations and samples	
Week 2 7/9 – 11/9	2.1-2.5 3.1- 3.4	Introduction, frequency tables & graphs, histograms, stem-&-leaf plot, set paired data. Mean, median, and mode	Thursday September 11 ➤ Last day for dropping course(s) without permanent record
Week 3 14/9 – 18/9	3.5-3.7 4.1-4.2	Variance & standard deviation, empirical rule and sample correlation coefficient. Probability: sample space & events,	

Week 4 21/9 – 25/9	4.3-4.4 4.5	Properties, and equally likely outcomes Conditional probability and independence	Tuesday September 23 ➤ National Day - Holiday
28/9 – 9/10 Ied Al-Adha vacation			
Week 5 12/10 – 16/10	5.1-5.2	Discrete random variables	
Week 6 19/10 – 23/10	5.3-5.5	Expected value & variance, binomial random variables	Sunday October 19 ➤ Start of midterm grade reporting, for a period of two weeks. Thursday October 23 ➤ Last day for dropping course(s) with grade of "W" thru Internet
Week 7 26/10 – 30/10	6.1-6.3	Continuous random variables, normal random variables	
Week 8 2/11 – 6/11	6.4-6.7	Standard normal random variable, probabilities, additive property and percentiles	
Week 9 9/11 – 13/11	7.1-7.5	Sample mean, central limit theorem and sampling proportions	
Week 10 16/11 – 20/11	8.1-8.6	Point estimates of population mean, proportion & variance and interval estimates of mean	Thursday November 20 ➤ Last day for withdrawal from <u>all courses</u> with grade of "W" thru the Univ Registrar Office
Week 11 23/11 – 27/11	8.7, 9.1-9.2	Interval estimates of proportion. Hypotheses test & significance levels	
Week 12 30/11 – 4/12	9.3-9.5	Hypotheses tests for mean and proportion	Sunday November 30 ➤ Beginning of Early Registration (142) ➤ Beginning of registration for Coop and Summer Training
Week 13 7/12 – 11/12	10.1-10.4	Testing equality of means: Large & small sample	
Week 14 14/12 – 18/12	12.1-12.5	Simple linear regression	Thursday December 18 ➤ Last day for major exams ➤ Last day for withdrawal from <u>all courses</u> with grade of "WP/WF" thru the University Registrar Office
Week 15 21/12 – 25/12	12.6-12.9	Coefficient of determination and correlation coefficient	
Week 16 28/12	Catch-up	Normal Sunday class	Sunday December 28 Last day of classes (Normal Tuesday Classes)

Outfits

Students will be required to carry a calculator with statistical functions. A binder will also be an asset to organize yourself with selected lecture notes, handouts, solutions to home works, exams etc.

Notices:

Any notice about the course will be communicated to the instructors through the emails, or through hard copies in pigeonhole. Students will be communicated by the announcements by the instructor.

Homework and Tutorials

Students are required to do the homework problems at home. The first hour of the lab would be devoted to solve the tutorial problems, and to guide how to solve other problems. The second hour of lab would be devoted to show students how to use the MINITAB statistical package and to use it to solve real life problems.

Homework Problems

Chapter Two: 2.2.1, 2.2.9, 2.3.2, 2.3.5, 2.4.3.

Chapter Three: 3.2.6, 3.2.14, 3.3.2, 3.3.10, 3.3.1.4, 3.4.1, 3.5.2, 3.6.1, 3.6.10, 3.7.3, 3.7.15.

Chapter Four: 4.2.3, 4.2.12, 4.3.2, 4.3.11, 4.4.2, 4.4.7, 4.5.4, 4.5.13.

Chapter Five: 5.2.6, 5.2.17, 5.3.4, 5.3.13, 5.4.8, 5.4.13, 5.5.5, 5.5.19.

Chapter Six: 6.2.3, 6.2.6, 6.3.2, 6.3.15, 6.4.2, 6.4.7, 6.5.3, 6.5.13, 6.7.4, 6.7.11.

Chapter Seven: 7.3.4, 7.3.6, 7.4.1, 7.4.4, 7.5.2, 7.5.7, 7.5.15

Chapter Eight: 8.2.4, 8.2.8, 8.3.4, 8.3.11, 8.4.2, 8.4.9, 8.5.3, 8.5.12, 8.6.2, 8.6.13, 8.7.3, 8.7.9.

Chapter Nine: 9.2.1, 9.2.3, 9.3.2, 9.3.11, 9.3.1.2, 9.4.3, 9.4.8, 9.5.2, 9.5.14.

Chapter Ten: 10.2.2, 10.2.7, 10.3.1, 10.3.10, 10.4.2, 10.4.9.

Chapter Twelve: 12.2.3, 12.3.3, 12.3.8, 12.4.6, 12.5.4, 12.5.12, 12.6.4, 12.7.3, 12.8.2, 12.9.1.