

KING FAHD UNIVERSITY OF PETROLEUM & MINERALS
DEPARTMENT OF MATHEMATICS & STATISTICS
DHAHRAN, SAUDI ARABIA
STAT201: STATISTICAL METHODS
Course Outline, Semester 161

Instructor: Raid Anabosi

Telephone: 013-860-1851

Office Hours: STR: 11:00 am – 1:00 pm or by appointment.

Office: 5-416

Email: anabosir@kfupm.edu.sa

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 Thursday October 13, 2016 at 18:00	15%
Exam 2 (Chapters 5 and 6) on Tuesday November 8, 2016 at 18:00	15%
Exam 3 (Chapters 7, 8, 9, and 10) on Wednesday December 14, 2016 at 18:00	20%
Lab exam on Thursday January 5, 2017	10%
Final exam (comprehensive) on Wednesday January 19, 2017 at 8:00 AM	30%

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.

Syllabus at a Glance

<i>Week</i>	<i>Section</i>	<i>Topics</i>
Week 1 18/9 – 21/9	1.1 -1.3	Introduction, the nature of statistics, populations and samples
Week 2 25/9 – 29/9	2.1-2.5 3.1- 3.4	Introduction, frequency tables & graphs, histograms, stem-&-leaf plot, set paired data. Mean, median, and mode
Week 3 2/10 – 6/10	3.5-3.7 4.1-4.2	Variance & standard deviation, empirical rule and sample correlation coefficient. Probability: sample space & events,
Week 4 9/10 – 13/10	4.3-4.4 4.5	Properties, and equally likely outcomes Conditional probability and independence
Week 5 16/10 – 20/10	5.1-5.2	Discrete random variables
Week 6 23/10 – 27/10	5.3-5.5	Expected value & variance, binomial random variables
Week 7 30/10 – 3/11	6.1-6.3	Continuous random variables, normal random variables
Week 8 5/11 – 9/11	6.4-6.7	Standard normal random variable, probabilities, additive property and percentiles
13/11 – 17/11 Midterm Break		
Week 9 20/11 – 24/11	7.1-7.5	Sample mean, central limit theorem and sampling proportions
Week 10 27/11 – 1/12	8.1-8.6	Point estimates of population mean, proportion & variance and interval estimates of mean
Week 11 4/12 – 8/12	8.7, 9.1-9.2	Interval estimates of proportion. Hypotheses test & significance levels
Week 12 11/12 – 15/12	9.3-9.5	Hypotheses tests for mean and proportion
Week 13 18/12 – 22/12	10.1-10.4	Testing equality of means: Large & small sample
Week 14 25/12 – 29/12	12.1-12.5	Simple linear regression
Week 15 1/1/2017 – 5/1	12.6-12.9	Coefficient of determination and correlation coefficient
Week 16 8/1	Catch-up	Normal Sunday class

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.