

KING FAHD UNIVERSITY OF PETROLEUM & MINERALS  
DEPARTMENT OF MATHEMATICS & STATISTICS  
DHAHRAN, SAUDI ARABIA

STAT201: STATISTICAL METHODS

*Course Outline, Semester 131*

**Instructor:** Esam Al-Sawi

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**Office Hours:** SMW: 9:00 – 9:50 am and 11:00 AM – 11:50 AM or by appointment.

**Text and Package:**

The recommended textbook and software are:

(1) Introductory Statistics by Sheldon M. Ross, 3-rd Edition, Elsevier, 2010.

(2) *MINITAB*.

**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, quizzes, lab, two major exams and final exam (comprehensive), with the following weighting:

Activities	Weight
Quizzes, homework and class work	10%
Exam 1 (Chapters 1, 2, 3 and 4) <i>Week 5, Monday September 30, 2013, 6:00 pm</i>	20%
Exam 2 (Chapters 5, 6 and 7) <i>Week 10</i>	20%
Lab reports and lab exam	10%
Final exam (comprehensive) <i>Monday December 30, 2013, 7:00 PM</i>	40%

## Syllabus (Tentative)

<i>Week</i>	<i>Section</i>	<i>Topics</i>	<i>Reminders</i>
Week 1 September 1 - 5	1.1 -1.3	Introduction, the nature of statistics, populations and samples	
Week 2 September 8 - 12	2.1-2.5 3.1- 3.4	Introduction, frequency tables & graphs, histograms, stem-&-leaf plot, set paired data Mean, median, mode	<b>Thursday September 12</b> Last day for dropping course(s) without permanent record
Week 3 September 15 - 19	3.5-3.7 4.1-4.2	Variance & standard deviation, empirical rule and sample correlation coefficient Probability: sample space & events,	
Week 4 September 22 - 26	4.3-4.4 4.5-4.5	Properties, and equally likely outcomes Conditional probability and independence	
Week 5 September 29 - October 3	5.1-5.2	Discrete random variables	<b>Exam 1 (Chapters 1, 2, 3 and 4)</b> <b>Monday September 30, 2013, 6:00 pm</b>
Week 6 October 6 – 9	5.3-5.5	Expected value & variance, binomial random variables	
<b>Hajj Vacation</b>			
Week 7 October 21 - 24	6.1-6.3	Continuous random variables, normal random variables	<b>Monday October 21</b> Last day for dropping course(s) with grade of "W" thru Internet <a href="http://regweb.kfupm.edu.sa">http://regweb.kfupm.edu.sa</a>
Week 8 October 27 - 31	6.4-6.7	Standard normal random variable, probabilities, additive property and percentiles	
Week 9 November 3 - 7	7.1-7.5	Sample mean, central limit theorem and sampling proportions	
Week 10 November 10 - 14	8.1-8.6	Point estimates of population mean, proportion & variance and interval estimates of mean	<b>Thursday November 14</b> Last day for withdrawal from <u>all courses</u> with grade of "W" thru the Univ Registrar Office
Week 11 November 17 - 21	8.7, 9.1-9.2	Interval estimates of proportion. Hypotheses test & significance levels	<b>Sunday November 17</b> Beginning of Early Registration for the Second Semester, 2013-2014 (132); Beginning of registration for Coop
Week 12 November 24 - 28	9.3-9.5	Hypotheses tests for mean and proportion	
Week 13 December 1 – 5	10.1-10.4	Testing equality of means: Large & small sample	
Week 14 December 8 – 12	12.1-12.5	Simple linear regression	<b>Thursday December 12</b> Last day for withdrawal from <u>all courses</u> with grade of "WP/WF" thru the University Registrar Office
Week 15 December 15 – 19	12.6-12.9	Coefficient of determination and correlation coefficient	
December 22 – 24		Review	<b>Tuesday December 24</b> Normal Thursday 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.