

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

STAT201: Introduction to Statistics

Course Outline, Semester 221

Instructor: **Mohammad Farah Saleh**

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Office Hours: UTR: 8:00 – 8:50 am and 12:15 – 12:50 pm

Text and Package:

The recommended textbook and software are:

- (1) Ross, S. H. Introductory Statistics, Elsevier, 2005.
- (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:

1. Recall techniques of data analysis.
2. Explain basic elements of probability.
3. Discuss assumptions, methods, and implications associated with various methods of statistical inference.
4. Use MINITAB and 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)	15%
Exam 2 (Chapters 5, 6 and 7)	15%
Exam 3 (Chapters 8, 9 and 10)	15%
Lab reports and lab exam	10%
Final exam (comprehensive)	35%

Syllabus

Week	Section	Topics
Week 1 28/8- 1/9	1.1 -1.3	Introduction, the nature of statistics, populations and samples
Week 2 4/9- 8/9	2.1-2.5 3.1- 3.4	Introduction, frequency tables & graphs, histograms, stem-&-leaf plot, set paired data Mean, median, mode
Week 3 11/9- 15/9	3.5-3.7 4.1-4.2	Variance & standard deviation, empirical rule and sample correlation coefficient Probability: sample space & events,
Week 4 18/9- 22/9	4.3-4.4 4.5-4.5	Properties, and equally likely outcomes Conditional probability and independence
Week 5 25/9- 29/9	5.1-5.2	Discrete random variables
Week 6 2/10- 6/10	5.3-5.5	Expected value & variance, binomial random variables
Week 7 9/10- 13/10	6.1-6.3	Continuous random variables, normal random variables
Week 8 16/10 - 20/10	6.4-6.7	Standard normal random variable, probabilities, additive property and percentiles
Week 9 23/10 - 27/10	7.1-7.5	Sample mean, central limit theorem and sampling proportions
Week 10 30/10 - 3/11	8.1-8.6	Point estimates of population mean, proportion & variance and interval estimates of mean
Week 11 6/11 - 10/11	8.7, 9.1- 9.2	Interval estimates of proportion. Hypotheses test & significance levels
Week 12 13/11 - 17/11	9.3-9.5	Hypotheses tests for mean and proportion
Week 13 20/11 - 24/11	10.1-10.4	Testing equality of means: Large & small sample
Week 14 4/12 - 8/12	12.1-12.5	Simple linear regression
Week 15 11/12 - 15/12	12.6-12.9	Coefficient of determination and correlation coefficient
Week 16 18/12		Normal Thursday class

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 teams.

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.

ATTENDANCE

- Students must adhere to the attendance policy of KFUPM.
- A DN grade will be awarded to any student who accumulates more than 20% unexcused absences or more than 33% excused and unexcused absences of lectures and labs.
- A DN grade will be assigned to the eligible student after being warned twice by his/her instructor.

EXAM ISSUES

- No student will be allowed to take the exam if not having his/her KFUPM ID or National/Iqama ID.
- Students are not allowed to carry mobiles, smart watches, or electronic devices to the exam halls/rooms.
- Students must take the exam in the place assigned to them.
- Missing an Exam: In case a student misses an exam (Exam I, Exam II, or the Final Exam) for a legitimate reason (such as medical emergencies), he/she must bring an official excuse from Students Affairs. Otherwise, he/she will get zero in the missed exam.

Problems (Ross, S. M. 2005)

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.