

KING FAHD UNIVERSITY OF PETROLEUM & MINERALS
DEPARTMENT OF MATHEMATICS & STATISTICS
STAT 565 – Sampling Methods
Course Outline

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Course Description (3-0-3):

Simple random sample. Sampling proportion. Sample size estimation. Stratified random sampling. Ratio, regression, and difference estimators. Systematic sampling. Single stage cluster sampling. Multi-stage cluster sampling. Unequal probability sampling.

Course Objectives The main objective of the course is to provide a deeper understanding of theory and applications of Sampling Methods. The course will help graduate students in learning advance techniques of analyzing the data after survey and sampling procedures.

Textbook: Lohr S. L. (2010), Sampling: Design and Analysis. Cengage Learning.

Additional Reference: *Sampling Techniques*, by William G. Cochran. Third edition, John Wiley & Sons, Inc. 1977

Software: R language.

Intended Learning Outcomes After the completion of this course, students should be able to:

1. Learn a variety of common sampling designs.
2. Apply sampling theory to sample survey problems.
3. Understand elements of proper survey design.

Assessment

Activities	Weight
Class Activities (Assignments, Quizzes and participation): i.e (A1, A2) & (Q1, Q2).	15%
First Major-C	25%
Second Major-CH	25%
Final exam (comprehensive)	35%

Grades: The letter grades will be assigned based on relative performance of the registered students.

General Notes:

- Students are required to carry **pens, binder** and a **calculator** with statistical functions to **EVERY lecture, and exam**.
- Students are also expected to take class notes and organize their learning material in a binder for easy retrieval to help them in study and review for class, exams, etc. It is to the student's advantage to keep a binder for storing class notes, homework, and other graded assignments. Students who are organized will find it easier to find important materials when studying for exams.

- To effectively learn statistics, students need to *solve problems* and *analyze data*. The selected assigned problems are specifically designed to prepare you for class quizzes, lab, majors and final exam. So, it is expected that you complete these problems *step-by-step* and with *comprehension*.
- ***Never round*** your intermediate results to problems when doing your calculations. This will cause you to lose calculation accuracy. Round only your final answers and you should not round less than 4 decimal places unless required otherwise.
- ***A formula sheet and statistical tables will be given for you in every exam, so you only need to bring with you pens, pencils, a sharpener, an eraser, and a calculator.***

Important Notes:

- Students will be required to carry a scientific calculator ***with statistical functions*** to ***every class, quiz, and exam.***
- In accordance with University rules, ***Nine (9) unexcused absences*** will automatically result in a grade of ***DN***. It is students' responsibility to provide valid written excuses on time before a ***DN*** report is issued.
- ***Attendance*** on time is *very* important.
- Mostly, attendance will be checked within the ***first five minutes*** of the class. Entering the class after that, is considered as one late, and ***every two lateness*** equals to one absence.
- All contacts or announcements between the instructor and the students are supposed to be held on Blackboard, so the student ***must*** check his Blackboard inbox ***at least once*** a day.

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, major exams, lab tests) 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.

Missing an Exam:

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 must bring an official excuse from Students Affairs. Otherwise, he will get zero in the missed exam."

R is the computational software for this course.