Course Specification
(Bachelor)

Course Title: Sampling Techniques	
Course Code: STAT 331	
Program: Statistics	
Department: Statistics and Operations Research	
College: Sciences	
Institution: King Saud University	
Version: 3	
Last Revision Date: 10-10-2024	

4. Course general Description:

The course is aimed to expose the students to the techniques of drawing representative samples from various populations and then preparing them on the mathematical formulations of estimating the population parameters based on the sample data. The students would also be exposed to the real-life applications of sampling techniques and estimation of parameters. Topics to be covered are determination of the sample size and selection of the sample, simple random sampling, stratified random sampling, cluster random sampling, and systematic random sampling.

7. Course Main Objective(s):

The objectives of this course are:
- Understanding the basic ideas of sampling from an applied perspective.
- Providing experience with real-life problems.

- Choosing the suitable sampling scheme to some real data sets
- Interpreting the statistical results and comparing the studied techniques.
- Increasing the skill of using the statistical software R.

2. Teaching mode (mark all that apply)

C. Course Content and weekly plan

Week	List of Topics	Contact Hours	Chapter
1	Probability sampling	4	CH. 1
2	Statistical preliminaries	4	CH.2
3	Simple random sampling: Estimation of means and totals	4	CH.3 (part 1)
4	Simple random sampling: Sample size determination	4	CH.3 (Part 2)
5	Simple random sampling: Estimation of proportions	4	CH.3 (part 2)
6			
7			
8	Systematic random sampling: Estimation of means and totals	8	CH. 4 (part 1)
9	Systematic random sampling: Estimation of proportions	4	CH. 4 (part 2)
10	Stratified random sampling: Estimation of means and totals	4	CH. 5 (part 1)
11	Proportion allocation and Neyman allocation	8	CH. 5 (part 2)
12			
13			
14	Stratified random sampling: Estimation of proportions	4	CH. 5 (part 2)
15	Cluster random sampling: Estimation of means and totals	8	CH. 6 (part 1)
16	Cluster random sampling: Estimation of proportions	4	CH 6. (part 2)
		60	

D. Students Assessment Activities

No	Assessment Activities	Assessment timing (in week no)	Percentage of Total Assessment Score	Submet by
1.	**First midterm** (from CH. 1 to CH3)	6th/7th	20	د/ محمد + د/ محمود
2.	**Second midterm** (from CH. 4 to CH5 without proportion)	12th/13th	20	د/ محمود+ د/ محمد
3.	**Homework and project**	7th-11th	20	
4.	**Final exam** (from CH. 5 to CH6)	17th/18th	40	د/محمد ، ود/ محمود، د/ ربى

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.).

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	Singh, Ravindra, and Naurang Singh Mangat. Elements of survey sampling. Vol. 15. Springer Science & Business Media, 2013.
Supportive References	Sampling Methodologies with Applications, Poduri S.R.S. Rao. CHAPMAN & HALL/CRC
Electronic Materials	
Other Learning Materials	