University of Jordan	
Faculty of Business	
Department	Business Economics
Programe	Bachelor
Module title / number	Sampling Theory and its Applications 1607352
Pre-requisite	Statistical Analysis 1607250
Module description	This course includes a brief revision of inferential statistics and techniques that are related to sampling theory. Our methodology in this course, will be to determine the type of sampling which is suitable for a certain case, show how the sample can be selected and estimate the parameters of the population such as the mean, the total, the proportion and the size of sample which is required to estimate these parameters with a certain range of precision
Objectives	The objective of this course is to provide the students with skills in distinguishing between different sampling methods and learn how to select a representative sample. It is also intended to provide the students with a good background in estimation and testing of hypothesis.

Intended Learning Outcomes (I L Os)

Successful completion of this course should lead to the following learning outcomes:

1- Knowledge and Understanding	1. **Knowledge and understanding .** - **understand and comprehend the basic concepts of: population, frame, sampling unit, random selection,…** - **Demonstrate good knowledge and skill in selecting a sampling method for a certain study.** - **Know how to apply the selected sampling method and how to collect the data.** - **Know how to estimate the population parameters from the collected data and test the hypotheses concerning these parameters.** 2. **Analytical and Thinking Skills** Upon the completion of such a course, students should be able - **to write a research proposal properly** - **to design and execute a survey** - **to collect the data, organize and analyze it, interpret results, draw conclusions and base decisionson these conclusion.**

Teaching and Learning Methods		
	- The major part of the course will be given by lectures. - Problem solving and discussion will take a significant part of the lecture time. - The students in the class will be divided into several groups. Each group will be asked to specify a problem of special interest and collect data which might help in solving the specified problem. This of course will include: defining the population, the unit of the population, the frame of the study and deciding on the method of sampling.	

Assessment Methods		
	Students assessment will be based on the following - **Mid-term Exam 30%** - **Second Exam and Assignment, 20%** - **Final Exam 50%** **Timing of the exams and details of assignments will be announced in the lectures and on the door of the instructors office.**	

Main Textbook(s) and additional readings		
	- Sampling: methods and Applications, (In Arabic), Fathi Arouri, Amman 2004. - Sampling Techniques, W.G Cochran Wiley, 1963	

Detailed lecture schedule

		Material	Homework and Assignments
	Unit 1	Introduction: What is sampling and why study sampling (3hrs)	
	Unit 2	Some Basic Concepts: universes, accessible population, sampling unit, frame, random selection, random numbers, sampling error, sampling without replacement and sampling with replacement, advantages of sampling (3 hrs)	
	Unit 3	Sources of Data,	

		Questionnaires, Descriptive measures (3 hrs)	
	Unit 4	**Point Estimation: moments method, maximum likelihood method, least squares method.**	
	Unit 5	**Properties of a Good Point Estimator: unbiasedness, consistency, efficiency, sufficiency (3 hrs),**	

	Unit 6	**Confidence Intervals and Testing of Hypotheses (3 hrs)**	
	Unit 7	**Simple Random Sample: methods of selection, estimation of the population mean, estimation of the population proportion, estimation of the sample size necessary to estimate the previous parameters with required precision (6 hrs)**	
	Unit 8	**Stratified Random Sample: division of the population into strata, selection of the sample, methods of allocation, estimating the population mean, the population proportion, the population total and the sample size for every one of them (6 hrs)**	
	Unit 9	**Systematic Random Sample: merits and disadvantages of systematic random sample, estimation of the population mean, the population proportion, the population total, and the sample size for**	

		each one of them (6hrs)	
	Unit 10	Cluster Random sampling (6 hrs)	