Department of: Economics .

College of: Administration and Economics.

University of: Salahaddin.

Subject: Principle of Statistics.

Course Book : *1ˢᵗ stage*

Second Semester

Lecturer's name: Parzhin Anwer Muhammad (MSc)

Academic Year: 2023 - 2024

Course Book

1. Course name	Principle of statistics
2. Lecturer in charge	Parzhin Anwer Mohammed
3. Department/ College	Department of Economics / College of Administration and Economics.
4. Contact	e-mail: parzhin.muhammrd@su.edu.krd Tel: (07828927092)
5. Time (in hours) per week	For example Theory: 9 hours Practical: 0
6. Office hours	9 hours per week
7. Course code	
8. Teacher's academic profile	From 2012 until 2014 worked in Statistics Department - Salahaddin University. In 2016 I had my MSc. In Statistics from same University. From 2019 till now I am working as a Lecturer in Statistics Department- Salahaddin University.
9. Keywords	elementary of statistics , central of tendency , dispersion , correlation , and regression

10. **Course overview:**

statistics is an attractive and useful subject , every time you open a website newspaper read and article or listen to a new report you can find examples of statistics in your every day world . most students find elementary of statistics subject very interesting and are pleasantly surprised at how different it is from other courses

this course is designed primarily for first class student in order to have basic information about statistics , providing a good foundation for students intending to do further coursework and research involving the use of statistics analysis . there will be a heavy emphasis on applications of basic statistical concepts to a wide variety of problems encountered in many fields. The focus will be on understanding how to use and interpret the statistical procedures commonly used in quantitative and qualitative researches .the use of computer packages for assisting in data analysis will be emphasized throughout the course if there will be enough time and the students registration will start soon .

students who have this course could find good works in real life even during the study period , because statistics and data are present in every where (institutions , organizations , factories , hospitals … etc)

11. **Course objective:**

The general purpose of this course is to study the basic concept of statistic in order to help student understand the value of statistics in acquiring knowledge, so that Preparing them with in depth learning principles of descriptive statistics and probability some statistical methods. After taking this course , students will be able to use basics statistical instruments , including statistical tables and charts to perform simple statistical analysis for small samples, solve simple probabilistic problems and they will be prepared studying statistical subjects in academic classes . Topics include displaying and describing definition of statistics . levels of measurements , methods of sampling various charts types , measures of central tendency and dispersion . the normal distributions , techniques of counting , scatterplots , concepts of probability

12. Student's obligation

the student commitment the lecture times.

• Commitment to the rules of the class.

•Solve the homework of which was given .

13. Forms of teaching

A course with a large proportion of its teaching taking place in lectures will need to have a high level of essential interest to students to keep them engaged . there are a lot of talks about what is good teaching technique in academic circle , they often come out with different forms such as . classical teaching with blackboard. Power point presentations for the head titles and definitions and summary of conclusions , classification of materials and any other illustrations , studnts will be asked to prepare reports on statistical topics and they should participate as mush as possible in lectures discussions . .

14. Assessment scheme

  1- Midterm exam: 20 % marks.

  Class assignments & quizzes: there will be weekly class assignments and quizzes; 20 % marks.

There will be extra assignments, which give the students extra marks.

  2- Final exam: 60 % marks.

15. Student learning outcome:

 During the study period of BSc , there will be good opportunities for students who had this course to engags in part time works in many companies and organizations as data collectors , data entries , data presenters and analysers . therefore , it is very important to have all the subjects which are pretended to take in this course . in another hand . without taking this course , students could not have good understanding for the subjects of the next years.

Students will have good knowledge about the philosophy of statistics and how to merge between statistical methods and real life . in other words , students can do something with any data that they receive it

16. Course Reading List and References:

1. Bluman, Allan G., Elementary Statistics (A step by step approach), 6th ed., 2007.
2. Mood, A. M., Graybill, F. A., Boes, D. C., Introduction to the theory of statistics, McGraw-Hill Pub. 3rd ed., 1974.
3. Spiegel, M. R., Theory and Problems of Statistics (Schaum's Outline), 3nd ed., 1999.
4. Weiss, N. A., Elementary Statistics, 4th ed., 1999.
5. David S. Moore, The Basic Practice of Statistics, 3rd ed., 2003.
6. المشهداني، محمود حسن، هرمز، أمير حنا، الإحصاء، 1989.
7. الراوي، خاشع محمود، المدخل الى الإحصاء، جامعة الموصل، 1984.
8. بۆتانى،دلشاد شاكر، Statistics ئامارزانى، ،كلية الادارة والاقتصاد-قسم الاحصاء جامعة صلاح الدين ،2015.

17. The Topics: Principle of statistics		Lecturer's name:
	Subject	Parzhin anwer

Week1	- Introduction in Statistics - Definitions:
	  1- Statistics
	  2- Statistical method - Statistical method in scientific research - Types of statistics
	  1. Descriptive statistics
	  2. Inferential statistics - Data - Population
		9 hours a week
		
		ex: 20 /1/2023

Week2	- Variable - Types of Variables - Sources of data Collection - Methods of data Collection	
Week3	• Types of Samples 1- Random samples 2- Non random Samples Types of Random Samples 1. Simple random sampling	
Week4	2. Stratified random sampling 3. Systematic random sampling 4. Cluster random sampling 5. Multistage random sampling	
Week5	- Types of Non- Random Samples - Presentation of data 1- Frequency distribution (Tabular presentation)	
Week6	2- Graphical presentation Graphical presentation of quantitative data 1- Histogram 2-Frequency polygon	
Week7	Graphical presentation for qualitative data 1- Bar chart 2-Pie chart 3- Line chart	
Week8	- Summation - Notation	
Week9	• Measures of central tendency 1- Arithmetic mean	

Week10	2-Mode 3-Median	
Week11	• **Measures of Dispersion** Measures of Dispersion Variation 1- Range	
Week12	2- Variance	
Week13	3- Standard devaition	

18. Practical Topics (If there is any)

In this section The lecturer shall write titles of all practical topics he/she is going to give during the term. This also includes a brief description of the objectives of each topic, date and time of the lecture.

19. Examinations:

Q1\\ Define:

1. Statistics

is the science of planning studies and experiments, obtaining data, reviewing, organizing, summarizing, presenting, analyzing, interpreting, and drawing conclusions based on the data to give the best decision.

2. Sample

is a sub-collection of elements drawn from a population.

Q2\\ If you have (4) person ……… A, B, C, D
How many way you select (2) person for (4).
Sol:

$$\gamma = \binom{N}{n} = \frac{N!}{n!\,(N-n)!}$$

$$\gamma = \binom{4}{2} = \frac{4!}{2!\,(4-2)!}$$

$$= \frac{4*3*2*1}{(2*1)*(2*1)} = \frac{24}{4} = 6$$

AB , AC , AD , BC , BD , CD

Q3\\ The following data represent person's number of family in small town.
3, 5 ,8 ,10 , 12 , 2 , 7 , 5 , 11 , 9 , 5, 6, 13, 15, 12 , 4 , 5 , 4 , 3 , 5
Construct the frequency distribution table.
   Solution:
   1. *Find the range?*

$R = x_l - x_s + 1 = 15 - 2 + 1 = 14$

2. *Find the number of classes?*

$m = 2.5 * \sqrt[4]{n}$

$m = 2.5 * \sqrt[4]{20} = 5.2 \cong 5$

3. *Find the length of classes?*

$L = \frac{R}{m} = \frac{14}{5} = 2.8 \cong 3$

4. *Find frequencies of any classes?*

Classes	Frequency
2 _4	5
5 _7	7
8_10	3
11_13	4
14_16	1
Total	20

20. Extra notes:

21. Peer review   پێداچوونەوەی هاوەڵ