

## Department of Chemistry

## College of Education

## University of Salahaddin

## Subject:Statistics

Course Book - (Year 2)(second Course )

Lecturer's name Ferman Ali Ahmed

Academic Year: 2022/2023

## Course Book

| 1. Course name | Statistics |
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| 2. Lecturer in charge | Ferman Ali Ahmed |
| 3. Department/ College | Mathematics / Education |
| 4. Contact | e-mail: ferman.ahmed@su.edu.krd <br> Tel: 07504753287 |
| 5. Time (in hours) per week | Theory: 2 hours |
| 6. Office hours | Monday 10-12 am <br> Tuesday 10-12 am |
| 7. Course code | 2003-2007 BSc. of the mathematics <br> Department of Mathematics <br> College of Education <br> University of Salahaddin-Hawler <br> 8. Teacher's academic profile <br> Erbil <br> Kurdistan Region |
| Iraq <br> 2012-2013 MRes of the mathematics <br> Department of Mathematics <br> University of Leicester <br> UK |  |
| 10. Course overview: | Statistics |
| define essential terms and concepts in statistics like statistical population ,sample, data, |  |
| datum. Next we will define basic sources of information and distinguish between various |  |
| types of data. Then we will consider the most important measures for centrality (mean, |  |
| median and mode) and spread (range, standard deviation, variance \& coefficient of variation). |  |
| These will be followed by tabulating raw data and representing them by appropriate graphs. |  |
| Finally, we will learn how to summarize tabulated data .All the previous, make it possible to |  |
| represent large amounts of data in a clear way, enabling the student to spot interesting |  |
| patterns. |  |

## 11. Course objective:

Statistics is the science of learning from data, and of measuring, controlling, and communicating uncertainty; and it thereby provides the navigation essential for controlling the course of scientific and societal advances

Statisticians apply statistical thinking and methods to a wide variety of scientific, social, and business endeavors in such areas as astronomy, biology, education, economics, engineering, genetics, marketing, medicine, psychology, public health, sports, among many.

Many economic, social, political, and military decisions cannot be made without statistical techniques, such as the design of experiments to gain federal approval of a newly manufactured drug.

## 12. Student's obligation

in this year we take some quiz , the student must prepare report and take two assignments, determine the active students.

## 13. Forms of teaching

Different forms of teaching will be used to reach the objectives of the course: power point presentations for the head titles and definitions, figure and summary of conclusions, classification of materials and any other illustrations.
14. Assessment scheme

Midterm Examination
Course work and assignments
Final Examination $60 \%$.
Total Marks 100\%

## 15. Student learning outcome:

- Understand what is statistics and be familiar of basic definition of statistics to learn how summarize and analysis the data
- To Learn frequency what is frequency distribution
- Learn how to construct a frequency tables (line, pie and chart).
- Learn how to use grouped data and ungrouped data.
- Learn how to compute mean and median and mode..


## 16. Course Reading List and References:

- AGAG Bluman. "Frequency Distributions and Graphs"
- Graham Hole, COGS "Research Methods 1: Frequency Distributions:"

The course materials of the course consists of the above books, articles from internet, and lectures notes, make sure read all the materials and prepare will before going for the exams.

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| 17. The |  | Lecturer's name |
| :---: | :---: | :---: |
| 1 | Statistics, general types of statistics, Descriptive statistics Examples, Inferential statistics Examples, branches of statistical inference some basic definition. | Ferman Ali |
| 2 | Frequency Distribution, Examples. Type of frequency distribution | Ferman Ali |
| 3 | Ungrouped frequency distribution Examples Grouped frequency distribution, examples | Ferman Ali |
| 4 | some type of average athematic mean examples For grouped data | Ferman Ali |
| 5 | Median, examples. For grouped data | Ferman Ali |
| 6 | Mode, examples. For grouped data | Ferman Ali |
| 7 | Median, examples, for ungrouped data. | Ferman Ali |
| 8 | Mode, examples, for grouped data examples. | Ferman Ali |
| 9 | Exam | Ferman Ali |
| 10 | The Midrange, weighted mean, | Ferman Ali |
| 11 | Measures of Variation, Range | Ferman Ali |
| 12 | Population Variance and Standard Deviation Sample Variance and Standard Deviation | Ferman Ali |
| 13 | Coefficient of Variation | Ferman Ali |
| 14 | Measures of Position, Standard Scores, Percentiles, Quartiles and Deciles | Ferman Ali |
| 15 | Exam |  |
| 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 |  | $\begin{aligned} & \text { Lecturer's name } \\ & \text { ex: (3-4 hrs) } \\ & \text { ex: } 1 / 11 / 2020 \end{aligned}$ |

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## 19. Examinations:

Q1/ A: -What is Statistics? Give the definition of the main branches of statistics? (10marks)
B: - Defines the following?
1- Population. 2-Sample. 3-Frequency distribution. 4-Exclusive method. (10marks)

| Q2/ Construct | group | frequency from following | data? | (20marks) |  |  |  |  |  |
| :---: | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 55 | 115 | 117 | 114 | 59 | 109 | 63 | 97 | 90 | 59 |
| 105 | 81 | 84 | 81 | 82 | 61 | 103 | 77 | 82 | 76 |
| 68 | 86 | 97 | 80 | 77 | 85 | 69 | 62 | 101 | 83 |
| 58 | 83 | 101 | 86 | 84 | 78 | 59 | 92 | 88 | 97 |
| 87 | 92 | 70 | 86 | 72 |  |  |  |  |  |

1- Find cumulative frequency and mid-point?
2- Draw a bar, pie graph to represent the data?
Q3/The following table give the marks obtained by 89 students in statistics exam.
Estimate the mean and median.
$\begin{array}{lllllllll}\text { marks } & 10-14 & 15-19 & 20-24 & 25-29 & 30-34 & 35-39 & 40-44 & 45-49\end{array}$
$\begin{array}{lllllllll}\begin{array}{l}\text { No. of } \\ \text { students }\end{array} & 4 & 6 & 10 & 16 & 21 & 18 & 9 & 5\end{array}$
20. Extra notes:
21. Peer review بِيّاجپوونهوهى هاوهل


Hemin A. Ahmad
Assistant Lecturer.

