
# Department of Econometrics

# College of Administration and Economics

# University of Salahaddin-Hawler

# Subject: Principle of statistics.

# Course Book- (Year 1)-Second Semester

# Lecturer's name: Israa Muayad Ali (MSc.)

# Academic Year: 2022-2023

# Course Book

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|---|---|
| **1. Course name** | **Principle of statistics** |
| **2. Lecturer in charge** | Israa Muayad ALI |
| **3. Department/ College** | **Department of Statistics & Informatics**<br>**College of Administration and Economics.** |
| **4. Contact** | **e-mail: esra.moayad@gmail.com**<br>**Tel: (+9647503881128)** |
| **5. Time (in hours) per week** | **Theory: 4 hours** |
| **6. Office hours** | **4 hours per week** |
| **7. Course code** | |
| **8. Teacher's academic profile** | **In 2016 I obtained a master's degree in the Department of Statistics college of Administration and Economy, University of Salahaddin, Iam working as an assistant lecture in the Department of Statistics.** |
| **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 everyday 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 student's 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 everywhere (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, students will be asked to prepare reports on statistical topics and they should participate as much as possible in lectures discussions. .**

**14. Assessment scheme**

**Allocation of degree examinations as follows: -**

**1) 40 degree of yearly seek (20 per exam)**

**The first course (15) degree to action examination**
**(5) degree to absences & conducting quiz.**

**The second course (15) degree to action examination**
**(5) degree to absences & conducting quiz.**

**2) 60 degree final exam (first round or the second)**

**15. Student learning outcome:**

**During the study period of BSc, there will be good opportunities for students who had this course to engage in part time works in many companies and organizations as data collectors, data entries, data presenters and analyzers. 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- مباديء الإحصاء , أمير حنا هرمز , جامعة الموصل
2- مقدمة في الإحصاء , د. خاشع محمود الراوي , جامعة الموصل
3- التحليل الإحصائي الأساسي باستخدام SPSS , د.محفوظ جودة , جامعة العلوم التطبيقية , الطبعة الأولى , 2008
4- مباديء الإحصاء , د. طه حسين ود.سردار عثمان , جامعة صلاح الدين/أربيل
5- Statistics for Economics, Accounting and Business Studies Michael Barrow University of Sussex Fourth Edition 2006
**6- Bluman , Allan G .Elementary statistics (A step by step approach ), McGraw – Hill pub, 8th ed , 2012**


**17. The Topics:** | **Lecturer's name**

| | Subject | |
|---|---|---|
| Week 1 | • Introduction in Statistics<br>• Definitions:<br>Statistics | **Lecturer's name**<br>Israa Muayad Ali<br>**4 hours a week** |

| | | |
|---|---|---|
| | • Types of statistics<br>1. Descriptive statistics<br>2. Inferential statistics<br>• Definitions:<br>Population<br>Sample | |
| Week 2 | • Variable<br>• Types of Variables<br>• Types of Quantitative Variable<br>• Types of Qualitative Variable | |
| Week 3 | • Data<br>• Sources of collecting the data.<br>• Methods of collecting the data.<br>• Types of Samples<br>1. Random samples<br>2. Non random Samples | |
| Week 4 | • Types of Random Samples<br>1. Simple random sampling<br>2. Stratified random sampling | |
| Week 5 | 3. Systematic random sampling<br>4. Multistage random sampling<br>• Types of Non Random Samples | |
| Week 6 | • Presentation of data<br>1- Frequency distribution (Tabular presentation)<br>• Frequency distribution for qualitative data. | |
| Week 7 | Frequency distribution for quantitative data. | |
| Week 8 | Relative frequency distribution.<br>Cumulative frequency distribution. | |
| Week 9 | 2- Graphical presentation<br>Graphical presentation for qualitative data<br>1- Line chart | |
| Week 10 | 2- Bar chart<br>3- Pie chart | |
| Week 11 | Graphical presentation of quantitative data<br>1- Histogram<br>2- Frequency polygon | |
| Week 12 | • Summation | |
| Week 13 | • Notation | |
| **18. Practical Topics (If there is any)** | | |
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**19. Examinations:**

**Q1\\ Define Quantitative Variable**

1. **Quantitative variables:** They are numerical in nature and can be ordered or ranked. For example, the variable "Age" is numerical, and people can be ranked in order according to the value of their ages. Quantitative variables can be classified as:

A- **Discrete variables:** A variable is discrete if its range can assume only a finite or infinite number of values that is countable. For example, the number of children in a family.

B- **Continuous variables:** A variable is continuous if its range is uncountable. For example, the weights of students in a class.

***Q2\\ :*** find the variance of following table .

| Classes | 0-10 | 10 - 20 | 20 – 30 | 40 – 30 | 40-50 | 60–50 |
|---|---|---|---|---|---|---|
| Fr | **12** | **18** | **27** | **20** | **17** | **6** |

| Class | fi | xi | fixi | (xi-$\bar{x}$) | $(xi-\bar{x})^2$ | $fi(xi-\bar{x})^2$ |
|---|---|---|---|---|---|---|
| 0_ | 12 | 5 | 60 | -23 | 529 | 6348 |
| 10_ | 18 | 15 | 270 | -13 | 169 | 3042 |
| 20_ | 27 | 25 | 675 | -3 | 9 | 243 |
| 30_ | 20 | 35 | 700 | 7 | 49 | 980 |
| 40_ | 17 | 45 | 765 | 17 | 289 | 4913 |
| 50_60 | 6 | 55 | 330 | 27 | 729 | 4374 |

$$\bar{x}=\frac{2800}{100}=28$$

$$s^2=\frac{\sum_{i=1}^{n} f_i(xi-\bar{x})^2}{\sum_{i=1}^{n} fi}=\frac{19960}{100}=199$$

**20. Extra notes:**

| **21. Peer review** | **پێداچوونەوەی هاوەڵ** |
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