

## Module (Course Syllabus) Catalogue 2023-2024

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|--------------------------|--|--|
| College/ Institute       | College technology Erbil   |  |
| Department               | Information technology   |  |
| Module Name              | Introduction to statistic  |  |
| Module Code              | STA 305  |  |
| Degree                   | Technical Diploma <input type="checkbox"/>                       | Bachelor <input type="checkbox"/>                              |
|                          | High Diploma <input type="checkbox"/>                            | Master <input type="checkbox"/> PhD <input type="checkbox"/>   |
| Semester                 | Third semester   |  |
| Qualification            | Information and Communication technology                         |  |
| Scientific Title         | Asst .Lectuerer  |  |
| ECTS (Credits)           | 5  |  |
| Module type              | Prerequisite <input type="checkbox"/>                            | Core <input type="checkbox"/> Assist. <input type="checkbox"/> |
| Weekly hours             | 4  |  |
| Weekly hours (Theory)    | ( 2 )hr Class  | ( 2 )Total hrs Workload  |
| Weekly hours (Practical) | ( 2 )hr Class  | ( 4 )Total hrs Workload  |
| Number of Weeks          | 12   |  |
| Lecturer (Theory)        | Salar Ameen Rahemm   |  |
| E-Mail & Mobile NO.      | 0750 850 2617  |  |
| Lecturer (Practical)     | Dr. Salar Ameen Raheem ,<br>Mss. Reazna Ali and Mss. Asia Sabir. |  |
| E-Mail & Mobile NO.      | Salar.raheem@epu.edu.iq  |  |
| Websites                 |  |  |

# Course Book

|                                    |  |
|------------------------------------|--|
| <p><b>Course Description</b></p>   | <p>In life there is no certainty about what will happen in the future but decisions still have to be taken. Therefore, decision processes must be able to deal with the problems of uncertainty. Uncertainty creates risk and this risk must be analysed. Both qualitative and quantitative techniques for modelling uncertainty exist. In many situations large amounts of numerical data is available which requires statistical techniques for analysis.</p> <p>There fore Statistics currently plays an important role in the development of so many other sciences such as. Engineering, medicine, Agriculture, commerce, economy, social sciences, practical sciences (mathematics, physics and chemistry). Also, The application of statistical methods is very extensive and is used in all branches of Science and Technology, Industry, Business, Finance, Economics, Sociology, Psychology, Education, Medicine etc.</p> <p>The concept of statistics with the common people consists of numbers tables and data for describing a phenomenon such as population census or birth or death status in a place which is an initial understanding but the scientific understanding for statistics consists of data collection arrangement analysis interpretation and inference and privacy of population privacy of sample selected example according to specific statistical method.</p> |
| <p><b>Course objectives</b></p>    | <p>Identifying the student with the importance of statistics and the stages of statistical method, frequency table and data presentation also knowing the statistical theories such as the central tendency theory and dispersion theory and also knowing the relationship between the phenomena and the importance of such theories relate to it like correlation coefficients after discussing the random change concept wite providing the concept of probability subject and probability distribution.</p>   |
| <p><b>Student's obligation</b></p> | <p>1)Student readiness is very important to learn and get a note about the lesson because you are amenable to the lesson.</p>  |

|                                    |  |                       |                 |                                  |  |
|------------------------------------|--|-----------------------|-----------------|----------------------------------|--|
|                                    | <p>2) Be in the Hall or lab before starting time of the lecture<br/> 3) Listen to the lecture and write a note<br/> 4) If you don't understand please ask?<br/> <b>5) Is not allowed to use a mobile phone in the classroom during the time of lecture until the teacher goes out of the classroom, If you use it, therefore you face legal punishment.</b></p>  |                       |                 |                                  |  |
| <b>Required Learning Materials</b> | White board and Data show to view the headlines, definitions and tables.   |                       |                 |                                  |  |
| <b>Evaluation</b>                  | <b>Task</b>  | <b>Weight (Marks)</b> | <b>Due Week</b> | <b>Relevant Learning Outcome</b> |  |
|                                    | Paper Review   |                       |                 |                                  |  |
|                                    | Assignments  | Homework              | 2               |                                  |  |
|                                    |  | Class Activity        | 2               |                                  |  |
|                                    |  | Report                | 4               |                                  |  |
|                                    |  | Seminar               | 2               |                                  |  |
|                                    |  | Essay                 |                 |                                  |  |
|                                    |  | Project               |                 |                                  |  |
|                                    | Quiz   | 5                     |                 |                                  |  |
|                                    | Lab.   | 15                    |                 |                                  |  |
|                                    | Midterm Exam   | 20                    |                 |                                  |  |
|                                    | Final Exam   | 60                    |                 |                                  |  |
| Total                              | 100  |                       |                 |                                  |  |
| <b>Specific learning outcome:</b>  | <p>1- white board.<br/> 2- Data show<br/> 3- Discussion on subjects.</p>   |                       |                 |                                  |  |
| <b>Course References:</b>          | <ul style="list-style-type: none"> <li>• Introduction in statistics and analyses principles by using Spss</li> <li>• Statistics for sociological students and administrative sciences. Dr. Mahmud salim.</li> <li>• Statistical system understanding &amp; spss analyzing of data/Dr. Muhammed bilal.</li> <li>• Analyses and sampling of data/ hussein ali najeeb</li> <li>• Data analyses by using of spss marija norwess</li> <li>• Spss version 17.0 for windows analyses without</li> </ul> |                       |                 |                                  |  |

| <b>anguish</b>  |             |                         |
|---|-------------|-------------------------|
| <b>Course topics (Theory)</b>   | <b>Week</b> | <b>Learning Outcome</b> |
| 1-Definition of statistics & method of research design and methodology of data and means of collection classification and tabulation of data .                | 1           |                         |
| 2-Types of Samples and Frequency distributions and methods of data presentation and frequency distributions table for continuous and intermittent variables . | 2           |                         |
| 3-Frequency distribution and relative frequency distribution table and double and cumulative ascending and descending frequency distribution                  | 3           |                         |
| 4-Graphic presentation for tabulated and non-tabulated data .   | 4           |                         |
| 5-Measures of central tendency and their concept.   | 5           |                         |
| 6-Arithmetic mean and methods of its calculation for tabulated and non-tabulated data   | 6           |                         |
| 7-Median and methods of its calculation for tabulated and non-tabulated data.   | 7           |                         |
| 8-Balanced arithmetic mean .<br>Harmonic mean .   | 8           |                         |
| 9-Geometric mean, median and mode.  | 9           |                         |
| 10-Measures of dispersion their concept use and calculation of range.   | 10          |                         |
| 11-Standard deviation and methods of its calculation for non-tabulated data.  | 11          |                         |
| 12-Standard deviation and methods of its calculation for tabulated data .   | 12          |                         |
| 13-Variance and standard degree its concept and method of calculation   | 13          |                         |
|   |             |                         |

| Practical Topics   | Week | Learning Outcome |
|--|------|------------------|
| 1-input the programming spss for windows definition of variable name variable              | 1    |                  |
| 2-Input the data of computer and formating and saving.                                     | 2    |                  |
| 3-Exporting and importing data in excel.   | 3    |                  |
| 4-defintion scrien spss.   | 4    |                  |
| 5-Cut or move columns and row and copy and pasetand font insert input variable the columns | 5    |                  |
| 6-marge table or file the one file   | 6    |                  |
| 7-Arithmetic mean.   | 7    |                  |
| 8- if and comput.  | 8    |                  |
| 9-Transpose and Rank cases   | 9    |                  |
| 10-Select cases and Count.   | 10   |                  |
| 11-variance and Range.   | 11   |                  |
| 12-Minmum and maximum.   | 12   |                  |
| 18- Mean, Median and Mode  | 13   |                  |
| 20- Standerd Mean and Standerd deviation   | 14   |                  |

### Quasion example design

Q1-Define statistics and what are the main stages of the statistical methods in the scientific research ?  
A/statistics is the scientific method which is specialized in collecting data and facts about phenomenon or particular hypotheses and organizing and tabulating of these data in amanner that facilitate the process of its analyses and interpretation and extracting the results and making decisions accordingly .  
The main stages include /

- Identification of the research problem .
- Collecting data and information about a phenomenon or problem.

- Classification tabulation and presentation of data .
- Calculating the statistical indicators .
- Analyses of study outcomes and calculation reading .

Q2/Calculate the ranks for the employees salaries for the stated data.

| Id  | salary | sex | age | jobcat     | Salcat |
|-----|--------|-----|-----|------------|--------|
| 101 | 380    | M   | 22  | programmer | 3      |
| 102 | 360    | F   | 21  | Operator   | 3      |
| 103 | 210    | M   | 31  | Programmer | 2      |
| 104 | 320    | m   | 31  | operator   | 3      |
| 105 | 200    | f   | 42  | manager    | 2      |

| Id  | salary | sex | age | jobcat     | Rsalary |
|-----|--------|-----|-----|------------|---------|
| 101 | 380    | M   | 22  | programmer | 1.00    |
| 102 | 360    | F   | 21  | Operator   | 3.00    |
| 103 | 210    | M   | 31  | Programmer | 4.00    |
| 104 | 320    | M   | 31  | Operator   | 5.00    |
| 105 | 200    | f   | 42  | manager    | 6.00    |

Q3/Showing the ranks & employees ages who are older than 30 years?

| Id  | Salary | Age |
|-----|--------|-----|
| 101 | 210    | 31  |
| 102 | 320    | 31  |
| 103 | 200    | 42  |

## 20. Extra notes:

I have no notification about my subject Statistics