# Course Description

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, demonstrating whether he/she has made the most of the available learning opportunities. They must be match to the description of the programe.

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| 1. Educational Institution | Shatt Al-Arab University |
| 2. Scientific Department / Center | College of Management and Economics / Oil and Gas Management and Marketing |
| 3. Course name/code | Principles of Statistics – MMOG1204 |
| 4. Available forms of attendance | Lecture |
| 5. Semester/Year | First stage/first semester |
| 6. Number of study hours (total) | 100 |
| 7. Date of preparation of this description | 1 – 9 - 2024 |

8. **Course Objectives:**

1. Understand the basic concepts of statistics such as sample, population, variables, and data.
2. Learn different methods of collecting data, including questionnaires, experiments, and observations.
3. Gain the skills necessary to apply statistical methods to analyze data and interpret results.
4. Understand basic probability distributions such as the normal distribution and the Poisson distribution.
5. Learn how to perform statistical inference, including hypothesis testing, confidence intervals, and regression.

6. Use statistics in various fields such as economics, medicine, social sciences, and others.
7. Enhance critical thinking skills through data analysis and evaluation of statistical studies.
8. Learn about software used in statistics such as SPSS or R to analyze data.

## 9. Course Outcomes and Teaching Methods, Learning and Evaluation

.1 Enable students to recognize the basic concepts of statistics, such as data types, variables, and samples.
2. Students' ability to collect data using a variety of methods and analyze it effectively.
3. Apply appropriate statistical methods to draw conclusions from data, including hypothesis testing and confidence intervals.
4. The ability to interpret statistical results accurately and write reports that clearly summarize the results.
5. Enhance critical thinking skills by evaluating statistical studies and data.
6. Acquire the skills necessary to use statistical software to analyze data (such as SPSS, R, or Python).
7. Understand how statistics is applied in different fields such as economics, social sciences, and medicine.
8. The ability to present statistical results effectively to the target audience, whether academic or professional

B - Program Skills Objectives:

Skills objectives in Statistics include a set of skills that students seek to develop during their learning.

Here are some of these objectives:

1. Solve problems and be able to analyze mathematical problems and use different strategies to solve them.

2. Arithmetic operations and master basic operations

3. Geometric understanding

4. Interpret data and results

**Teaching and learning methods**

**1. Lectures.**

**2. Classroom discussion.**

**3- Solving exercises in class.**

**4. Discussing mathematical problems in class.**

**5. Daily tests.**

**Evaluation Methods**

1- Oral exams

2- Monthly exams

3- Daily exams

4- Student attendance and commitment to the schedule- Daily attendance.

C- Affective and Value-Based Goals

C-1 -- Achieving Moral Goals

C-2 - Achieving Commitment to University Norms

C-3 - Achieving Commitment to University Instructions and Ministry Laws

C-4 - Developing the Student's Personal Abilities in All Educational Fields and Good Interaction with Others

**Teaching and learning methods**

1- Lectures on University Instructions
2- Educational Guidance Lectures
3- Continuous Guidance
4- Visiting Public and Private Institutions
5-Presenting Practical Cases

**Evaluation Methods**

1- Daily exams

2- Lecture discussion and adherence to high morals and values

3- Participation grades

4- Monthly and semester evaluations

**d. General and qualifying skills transferred (other skills related to employability and personal development).**

D1- To enable the student to acquire the skill and art of management.

D2- To enable the student to use creative thinking methods in management.

D3- To enable the student to use modern methods of analysis and deduction.

D4- To enable the student to plan and think strategically in the management of production and service organizations.

10. Course Structure

| Al , Week | Hours | Required Learning Outcomes | Name of the unit and/or subject | Method of education | Evaluation Method |
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| 1 | 4 | The student understands the material | Statistics (concept), types of variables, concept of population, concept of sample, statistical symbols, simple examples) | Theoretical lectures Case study Discussion | Oral exams and questions |
| 2 | 4 | The student understands the material | Tabular presentation, graphic representation and data tabulation with examples | Theoretical lectures Case study Discussion | Oral exams and questions |
| 3 | 4 | The student understands the material | Clustered distributions, frequency distribution table | Theoretical lectures Case study Discussion | Oral exams and questions |
| 4 | 4 | The student understands the material | Measures of central tendency (arithmetic mean, stepwise mean, geometric mean, harmonic mean | Theoretical lectures Case study Discussion | Oral exams and questions |
| 5 | 4 | The student understands the material | The mediator | Theoretical lectures Case study Discussion | Oral exams and questions |
| 6 | 4 | The student understands the material | Measures of dispersion and dissimilarity | Theoretical lectures Case study Discussion | Oral exams and questions |
| 7 | 4 | The student understands the material | Midterm exam | Theoretical lectures Case study Discussion | Oral exams and questions |

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| 8 | 6 | The student understands the material | Average deviation (examples) | Theoretical lectures Case study Discussion | Oral exams and questions |
| 9 | 4 | The student understands the material | Correlation analysis (study of the relationship between two variables) | Theoretical lectures Case study Discussion | Oral exams and questions |
| 10 | 4 | The student understands the material | Correlation coefficient | Theoretical lectures Case study Discussion | Oral exams and questions |
| 11 | 4 | The student understands the material | Significance test of correlation | Theoretical lectures Case study Discussion | Oral exams and questions |
| 12 | 4 | The student understands the material | Regression | Theoretical lectures Case study Discussion | Oral exams and questions |
| 13 | 4 | The student understands the material | Multiple linear regression | Theoretical lectures Case study Discussion | Oral exams and questions |
| 14 | 4 | The student understands the material | Corrected coefficient of determination | Theoretical lectures Case study Discussion | Oral exams and questions |

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| 15 | 4 | The student understands the material | Test (1) Significance of the estimated parameters | Theoretical lectures<br>Case study<br>Discussion | Oral exams and questions |

| 12. Infrastructure | |
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| 1 Required textbook | Professor Dr. Mahfouz Fouad Al-Kanani<br>- Principles of Statistics - |
| 2 Key references (sources) | |
| a. Recommended books and references (scientific journals, reports,.... ) | |
| b. Electronic references, websites .... | . |

| 13-Course improvement Plan |
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| 1. Simplify Concepts: Present Statistical concepts in a simplified manner using illustrations and visual aids.<br>2. Add Diverse Examples: Include examples from different areas of life to illustrate the applications of mathematics.<br>3 Diversify Teaching Methods<br>4. Project-Based Learning: Use interactive projects that encourage students to use mathematical concepts to solve real-life problems.<br>5. Cooperative Learning: Encourage teamwork among students to solve mathematical problems.<br>6. Use of Technology<br>7. Digital Tools: Integrate educational programs and mathematical applications to enhance understanding and interaction<br>8 - Online Lessons Providing recorded lessons and digital educational content to enable self-learning |

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