Course Description

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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.

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	Mathematics – MMOG1104
4. Available forms of attendance	Lecture / Online
5. Semester/Year	First stage/first semester
6. Number of study hours (total)	150
7. Date of preparation of this description	1 – 9 - 2024

8. **Course Objectives:**

1- This definition provides an introduction to some of the basic principles in
-2- Introduce them to the periods for applying these principles and algebraic operations on
3- Introducing them to functions, limits, linear equations, and methods for solving them
4- Introducing them to the intervals for applying these principles and algebraic operations to sets.

9. Course Outcomes and Teaching Methods, Learning and Evaluation

1. Understand the concept of a set and its elements, in addition to identifying finite and non-finite sets.

2. Finite sets, empty sets, and equal and partial sets.

3. Equal and partial sets.

4. Learn methods for solving the difference between sets, the inverse difference, and the laws of distributing sets.

5. Understand the concept of a limit and its importance in mathematics.

6. Identify limits when approaching a certain number, as well as limits when approaching infinity.

7. Understand the concept of a function and its types: linear functions, quadratic functions, polynomial functions, and exponential functions.

The ability to represent a function graphically and understand the relationship between variables.

Understand the concept of a matrix and its types: square and rectangular matrices, etc.

10. Learn how to organize the elements within a matrix.

11. Understand the concept of a linear equation and its general form

12. The ability to represent linear equations graphically and understand the relationship between variables.

13. Understand the concept of differentiation and its role in mathematics.

14. Recognize derivatives and how to calculate them.

15. Understand the concept of integration and its role in mathematics.

16. Recognize definite and indefinite integration and when to use each.

B - Program Skills Objectives:

Skills objectives in mathematics 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
1	4	The student understands the material	.Mathematical Sets	Theoretical lectures Case study Discussion	Oral exams and questions
2	4	The student understands the material	Sets and Operations on Them	Theoretical lectures Case study Discussion	Oral exams and questions
3	4	The student understands the material	Purpose	Theoretical lectures Case study Discussion	Oral exams and questions
4	4	The student understands the material	Radical Purpose and Side Purpose	Theoretical lectures Case study Discussion	Oral exams and questions
5	4	The student understands the material	Functions	Theoretical lectures Case study Discussion	Oral exams and questions
6	4	The student understands the material	Functions	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

8	6	The student understands the material	Matrices	Theoretical lectures Case study Discussion	Oral exams and questions
9	4	The student understands the material	Mathematical Operations on Matrices	Theoretical lectures Case study Discussion	Oral exams and questions
10	4	The student understands the material	Mathematical Operations on Matrices	Theoretical lectures Case study Discussion	Oral exams and questions
11	4	The student understands the material	Mathematical Equations	Theoretical lectures Case study Discussion	Oral exams and questions
12	4	The student understands the material	Differentiation	Theoretical lectures Case study Discussion	Oral exams and questions
13	4	The student understands the material	Differentiation	Theoretical lectures Case study Discussion	Oral exams and questions
14	4	The student understands the material	Integration	Theoretical lectures Case study Discussion	Oral exams and questions

15	4	The student understands the material	Integration	Theoretical lectures Case study Discussion	Oral exams and questions

12. Infrastructure	
1 Required textbook	Principles of Mathematics / Written by: Dr. Muhammad Al-Qadi and Al-Bakr
2 Key references (sources)	Economic Mathematics / Written by Dr. Adnan Al-Jourani
a. Recommended books and references (scientific journals, reports,....)	
b. Electronic references, websites	**springer** .

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

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