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	Computer Technology Engineering			
3. Course name/code	Mathematics1			
4. Programme(s) to which it contributes	First class of Telecommunications Networks Computer			
5. Available forms of attendance	Lecture			
6. Semester/Year	2024/2025			
7. Number of study hours (total)	192 hours	Number of hours per week		
		theoretical	practical	Total
		3		12
8. Date of preparation of this description	29 – 7 - 2025			

9. **Course Objectives:**

1- Study linear and circular equations.
2- Study the range and subdomain of functions.
3- Study odd and even functions.
4- Study objectives, their types, and continuity.
5- Study integration and differentiation.

10. Course Outcomes and Teaching Methods, Learning and Evaluation

A- Cognitive Objectives
A-1 Solve linear and circular equations
A-2 Understand the basic principles of functions and their purpose.
A-3 Distinguish whether a function is continuous or discontinuous.
A-4 Distinguish whether a function is odd or even.
A-5 Know how to differentiate and integrate a function.

B. Subject-specific skills

B1 - Identify and solve a mathematical problem.

B2 - Analyze and interpret results.

B3 - Use rules and laws optimally.

Teaching and learning methods

- Theoretical lectures

- Presentation lectures

- Group discussions of mathematical and applied examples

Evaluation Methods

- Short tests

- Classroom interaction

- Homework

- Daily attendance

C. Thinking Skills

A-1. Instilling a sense of creativity in students and ensuring they find innovative solutions to various problems.

A-2. Developing students' ability to work as effective teams that produce outstanding results.

A-3. Developing students' ability to engage in dialogue and discussion in a scientific manner.

Teaching and learning methods
- Theoretical lectures - Presentation lectures - Group discussions of mathematical and applied examples
Evaluation Methods
- Short tests - Classroom interaction - Homework - Daily attendance
d. General and qualifying skills transferred (other skills related to employability and personal development). D1- Developing students' ability to deal with modern mathematical methods. D2- Developing students' ability to engage in dialogue and discussion. D3- Encouraging students to work in groups. D4- Building ideas and communicating in writing and orally

11. Course Structure					
Al , Week	**Hours**	**Required Learning Outcomes**	**Name of the unit and/or subject**	**Method of education**	**Evaluation Method**
1	3	Finding Linear Equations	Line and circle Equation	Theoretical presentation With the help of With Charts Illustrative + practical lectures	Achievement test + Discussion and question
2	3	Finding Cyclic Equations	Line and circle Equation	Theoretical presentation With the help of With Charts Illustrative + practical lectures	Achievement test + Discussion and question
3	3	Finding Range and Codomain	Line and circle Equation	Theoretical presentation With the help of With Charts Illustrative + Practical Lectures + Panel Discussions	Achievement test + Discussion and question
4	3	Defining Even and Odd Functions	Line and circle Equation	Theoretical presentation With the help of With Charts Illustrative + Practical Lectures + Panel Discussions	Achievement test + Discussion and question
5	3		Midterm Exam	Theoretical presentation With the help of With Charts Illustrative + Practical Lectures + Panel Discussions	Achievement test + Discussion and question

6	3	Properties of Limits	The Limit and continuity	Theoretical presentation With the help of With Charts Illustrative + Practical Lectures + Panel Discussions	Achievement test + Discussion and question
7	3	Finding Limits of Functions	The Limit and continuity	Theoretical presentation With the help of With Charts Illustrative + Practical Lectures + Panel Discussions	Achievement test + Discussion and question
8	3	Types of Limits	The Limit and continuity	Theoretical presentation With the help of With Charts Illustrative + Practical Lectures + Panel Discussions	Achievement test + Discussion and question
9	3	Limit of Trigonometric Functions	The Limit and continuity	Theoretical presentation With the help of With Charts Illustrative + Practical Lectures + Panel Discussions	Achievement test + Discussion and question
10	3	Continuity of Functions	The Limit and continuity	Theoretical presentation With the help of With Charts Illustrative + practical lectures	Achievement test + Discussion and question

11	3	Introduction to Differentiation	Differentiation	Theoretical presentation With the help of With Charts Illustrative + practical lectures	Achievement test + Discussion and question
12	3	Differential of Trigonometric Functions	Differentiation	Theoretical presentation With the help of With Charts Illustrative + practical lectures	Achievement test + Discussion and question + and answer my class
13	3	Introduction to Integration	Differentiation	Theoretical presentation With the help of With Charts Illustrative + practical lectures	Achievement test + Discussion and question
14	3	Types of Integration	Integration	Theoretical presentation With the help of With Charts Illustrative + practical lectures	Achievement test + Discussion and question
15	3	Applications of Integration	Integration	Theoretical presentation With the help of With Charts Illustrative + practical lectures	Achievement test + Discussion and question
16			Preparatory week before the final Exam		

12. Infrastructure	
1 Required textbooks	DaivdC.Lay,Judi J.McDonald,Steven

	R.Lay,"Linear Algebra and Its Applications "Pearson Education, 6th edition (July 10th),ISBN-13:978-0136880929.
2 Key references (sources)	Gilbert Strang,"Linear Algebra and Its Application ",Cengage Learning 4th edition ,(January 1,2006),ISBN-13:978-0030105678.
a. Recommended books and references (scientific journals, reports,....)	
b. Electronic references, websites	https://www.udemy.com/course/linear-algebra-with -applications.

13-Course improvement Plan
١- Familiarity with all the latest developments in teaching and learning strategies. ٢- Increase the number of weekly course hours to 4 hours to accommodate the additional hours for classroom activities and completing as many exercises as possible.