



Course Description Form

Description of the location

This course description provides a concise summary of the main features of the course and the learning outcomes expected of the student, demonstrating whether the student has made the most of the available learning opportunities. It must be linked to the course .description .The program

Shatt al-Arab University	1 Educational institution .
Computer science	2 Scientific Department / Center .
Mathematics for Computer Science	3 Name/Code of the . headquarters
My presence	4 forms of Available . attendance
First semester/ 2024-2025	5 semester/year .
200	6 Number of study hours (total) .
August 5, 2024	7 Date this description was . prepared

8 Course objectives .

:Upon successful completion of this course, students should be able to .1

;Use algebra accurately .2

.Draw and interpret graphs .3

;Use of exponential, logarithmic, and trigonometric functions in applications .4

Calculating the sum of arithmetic and geometric series and using them in simple .5
;financial calculations

;Use basic differentiation rules and calculate derivatives of simple functions .6

;Use matrices to solve systems of linear equations .7

Skill objectives -

Enabling the student to refer the mathematical problem to a computer program and .1
.find a solution for it

The student's awareness of the close relationship between mathematical problems .2
.and computer programs

Course outcomes, teaching, learning and assessment methods .9:
 This course is designed for students entering university without a strong .1
 .background in mathematics
 It is also intended for students planning to pursue majors that require basic .2
 .computational skills, such as science, computing, and information technology
 .This course reinforces basic arithmetic and algebra skills .3
 .This material is designed to work with formulas .4
 .It also allows the use of exponential and logarithmic function applications .5
 This course is designed to explain how to apply the matrix to solve systems of .6
 .linear equations

A- Cognitive objectives

:The guidance content includes

Part A - Sequences and Series

A sequence is a function whose domain is the set of natural numbers. The limits of a :sequence are the values of the function. Two types of sequences will be studied arithmetic sequences and geometric sequences with their partial sums. A sequence is the infinite sum of a geometric sequence. [12 hours]

Part B - Matrices

Matrices are simply rectangular arrays of numbers with m rows and n .columns
 Matrix types and matrix algebra will be studied. We will also study how to find the inverse of a matrix, how to use a matrix and its inverse to solve systems of linear equations, and how to find the determinant of a matrix and use it to solve systems of linear equations. [12 hours]

Part C - Derivatives and Integrals

Derivatives mean that iff : $x \rightarrow y$ is a function, then the derivative of the function f at the point x written , $f'(x)$:is given by , $f'(x) = \lim_{h \rightarrow 0} \frac{f(x+h) - f(x)}{h}$ if this limit , $f'(x)$ exists and is bounded. The derivatives of $f : x \rightarrow y$ will be studied for ordinary functions, implicit derivatives, derivatives of trigonometric functions, and derivatives of exponential and logarithmic functions. In addition to a graph of exponential and logarithmic functions. While integrals mean that if a function $f(x)$ is defined on some interval, let $F(x)$ be another function such that $F'(x) = f(x)$ then , $F(x)$ is called an infinite integral of $f(x)$:and is written as $\int f(x) dx = F(x) + C$. [12 .[hours]

Part D - Interest

Interest is the rental fee charged by a lender to a business or individual for the use of money. Simple and compound interest will be examined. Simple interest means that ,the interest is calculated only once over the life of the loan. At the end of the term the borrower repays the principal plus interest. Compound interest means that the .interest is calculated more than once over the life of the loan. [9 hours]

<p>B-Skill objectives of the course</p> <p>The teacher explains the topic in detail by writing it down and explaining it on the .1 board and other educational tools</p> <p>.Discussion during the lecture period .2</p> <p>.Solve the homework .3</p> <p>.Review the websites related to the subject .4</p>					
Teaching and learning methods					
<p>1- In-person lectures</p> <p>2- Reports</p> <p>3- Seminars</p> <p>4- rapid tests</p>					
Evaluation methods					
<p style="text-align: center;">Module Evaluation</p> <p style="text-align: center;">Course material evaluation</p>					
		Time/ Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	LO #1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	LO #3, #4 and #6, #7
	Projects / Lab .	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO #5, #8 and #10
Summative assessment	Midterm Exam	2 hours	10% (10)	7	LO #1 - #7
	Final Exam	3 hours	50% (50)	16	All
Total assessment			100% (100 Marks)		

Curriculum plan

	Learning method	Unit name/topic	Required learning outcomes	watches	week

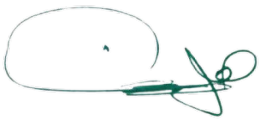


	1- In-person lectures 2- Reports 3- Seminars 4- rapid tests	- Introduction Sequences			the first
	1- In-person lectures 2- Practical laboratory lectures 3- Reports 4- Seminars 5- rapid tests	Arithmetic sequences and their partial equations			the second
	1- In-person lectures 2- Practical laboratory lectures 3- Reports 4- Seminars 5- rapid tests	Geometric sequences and their partial sums			the third
	1. In-person lectures 2. Reports 3. Seminars 4. rapid tests	Series			Fourth
	1- In-person lectures 2- Reports 3- Seminars 4- rapid tests	Matrices and Matrix Algebra			Fifth
	1- In-person lectures 2- Reports 3- Seminars 4- rapid tests	Inverse matrices			Sixth
	1- In-person lectures 2- Reports 3- Seminars 4- rapid tests	Solving Systems of Linear Equations Using Inverse Matrices			Seventh
	1- In-person lectures 2- Reports 3- Seminars 4- rapid tests	Determinant and its use to solve systems of linear equations			The eighth
	1- In-person lectures 2- Reports	derivatives			Ninth

	3- Seminars 4- rapid tests				
	1- In-person lectures 2- Reports 3- Seminars 4- rapid tests	Derivatives of ,trigonometric exponential, and logarithmic functions			tenth
	1- In-person lectures 2- Reports 3- Seminars 4- rapid tests	Integrals			eleventh
	1- In-person lectures 2- Reports 3- Seminars 4- rapid tests	Integration of ,trigonometric exponential, and logarithmic functions			twelfth
	1- In-person lectures 2- Reports 3- Seminars 4- rapid tests	Interest and simple interest			thirteenth
	1- In-person lectures 2- Reports 3- Seminars 4- rapid tests	compound interest			fourteenth
	1- In-person lectures 2- Reports 3- Seminars 4- rapid tests	Present and future values of the annual premium			fifteenth
	Theoretical lectures	Preparatory week before the final exam			sixteenth

Infrastructure .11	
nothing	Required textbooks -1

1. Cheryl Cleeves, Margie Hobbs, and Jeffrey Noble 2. James Stewart, Lothar Redlin, and Slim Watson 3. Robert Brechner and George Bergman	Main references (sources) -2
	a) Recommended books and ,references (scientific journals (.reports, etc
	,b) Electronic references, websites .etc

Curriculum development plan .12

 عميد الكلية	 رئيس القسم	 مدرس المادة
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