

Republic of Iraq

The Ministry Of Higher
Education

& Scientific Research

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ



University: Diyala

College: Engineering

Department: Civil

Stage: 1st year

Lecturer name: Qusay W. Ahmed

Qualification: Asst. Lecturer

Place of work: Diyala Univ. / Eng.

College / Civil Dep.

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Course Instructor	Qusay W. Ahmed				
E-mail	msc.qussay@yahoo.com				
Title	Mathematics I				
Course Coordinator	Mathematics I				
Course Objective	<p>The student learns the essential principle of mathematics (the Cartesian coordinates, graphics in the plane, slope and equations for lines, Circles and parabolas, Shifting Inequalities, Absolute value, Graphs and functions ,and review of trigonometric function) . To make students able to solve the issues related to limits and continuity. The student's understanding of the Derivatives of functions and its applications, To learn Integration: (Calculus and area - Definite integrals -The fundamental theorems of integral calculus -Indefinite integration with substitution - Numerical integration), -Indefinite integration - Numerical integration). Method of partial fractions). To know the Application of definite integrals : (Areas between curves-Volume of solids of revolution – disks and washers - Cylindrical shells- Lengths of curves in the plane -Areas of surfaces of revolution). To find out Polar coordinates: Graph in polar coordinates. Vectors and their applications. and Matrix Algebra.</p>				
Course Description	<p>Cartesian coordinates, graphics in the plane, slope and equations for lines. Circles and parabolas - Shifting Inequalities - Absolute value - Graphs and functions - review of trigonometric function. Limits and continuity, Derivatives, Transcendental functions, Application of derivative, Integrations, Integration rules, Application of definite integrals, Polar coordinates, Vectors and their applications, Matrix Algebra</p>				
Textbook	<p>Thomas' Calculus, 11th Edition BY George B. Thomas, Maurice D. Weir and Joel Hass,</p>				
Course Assessments	Term Tests	Laboratory	Quizzes	Project	Final Exam
	As(30%)		As(10%)	-	As(60%)
General Notes					

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Course Weekly Outline

Week	Date	Topics Covered	Lab. Experiment Assignments	Notes
1	21/9	Cartesian coordinates graphics in the plane, slope and equations for lines. Circles and parabolas		
2	28/9	Shifting Inequalities - Absolute value - Graphs and functions - review of trigonometric function.		
3	5/10	Limits and continuity :limits at infinity - continues function		
4	12/10	Derivatives (slopes, tangent lines)		
5	19/10	Rules Of Derivative		
6	26/10	Velocity and acceleration - Speed and other rates of change		
7	2/11	Derivative of trigonometric function		
8	9/11	The chain rule-Implicit differentiation		
9	16/11	Transcendental functions :(Inverse function and their derivatives)		
10	23/11	The logarithmic function, The derivative of natural logarithm function		
11	30/11	The relation between the logarithm and the natural logarithm		
12	7/12	Application of derivative :(Related rates of change, Relative maximum and relative minimum)		
13	14/12	Curve sketching with 1 st and 2 nd derivative -graphing rational functions		
14	21/12	Mean value theorem -Initial value problem		
15	28/12	Integrations :(Calculus and area - Definite integrals)		
16	4/1	The fundamental theorems of integral calculus		
Half – year break				
17	15/2	Indefinite integration with substitution		
18	22/2	Numerical integration		
19	1/3	Integration rules :(Basic integration formulas)		
20	8/3	Integration of trigonometric functions		
21	15/3	Method of partial fractions		
22	22/3	Application of definite integrals :(Areas between curves)		
23	29/3	Volume of solids of revolution		
24	5/4	disks and washers -Cylindrical shells		
25	12/4	Lengths of curves in the plane -Areas of surfaces of revolution		
26	19/4	Polar coordinates :Graph in polar coordinates		
27	26/4	Polar coordinates :Graph in polar coordinates		
28	3/5	Vectors and their applications.		
29	10/5	Vectors and their applications..		
30	17/5	Matrix Algebra		
31	24/5	Matrix Algebra		
32	31/5	Matrix Algebra		

INSTRUCTOR Signature:

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