Republic of Iraq
The Ministry of Higher Education
& Scientific Research
2024-2023

وزارة التعليم العالي والبحث العلمي
Ministry of Higher Education & Scientific Research

**Flow up of
implementation
syllabus**

University: **Thi - Qar**
College: **Pure science**
Department: Mathematics
Stage: **First**
Lecturer name: Nada mohammed
Academic Status: **Mathematics 1**
Qualification:
Place of work:

Course Instructor	Nada Mohammed Ayay
E_mail	**nada.mohammed@utq.edu.iq**
Title	Mathematics 1
Course Coordinator	
Course Objective	1. This course deals with the basic concept of mathematics. 2. To learn the basic ideas of differential and integral calculus. 3. To learn about the continuity of functions and its relationship with the ends. 4. To identify the derivation of functions and the integration of different functions and its relationship to continuity. 5. To know the applications of calculus in various sciences.
Course Description	By the end of this course students will be able to: 1. use the language of sets, functions, and relations to communicate mathematical ideas and arguments. 2. manipulate function limits, and use these to define and compute derivatives and integrals from first principles; relate differentiation and integration via the fundamental theorem of calculus. 3. present mathematical work in writing, using precise language and notation, providing clear conclusions and reasoning. 4. apply techniques from calculus to solve optimization problems, compute area, arc lengths, tangent directions, volumes. 5. compute derivatives (for both scalar and vector valued functions) and integrals using standard derivatives of polynomials, exponential, trigonometric, hyperbolic and logarithmic functions; chain, product and quotient rules; implicit differentiation; the fundamental theorem of calculus, substitution; integration by parts and other similar methods. 6. use calculus to solve mathematical problems.
Textbook	Thomas. G.B., Calculus and analytic Geomatry, 4th, 1984. JAMES STEWARTDC, Calculus, 6th, 2008.

Course Assessment	Term Tests	Laboratory	Quizzes	Project	Final Exam
	40	-	10	-	50

General Notes	

ملاحظة: أعدت الاستمارة أستنادا الى كتاب وزارة التعليم العالي والبحث العلمي، جهاز الاشراف والتقويم العلمي، دائرة ضمان الجودة والاعتماد الاكاديمي، قسم تقويم الاداء .... ج د ت / 1860 في تاريخ 02/ 10/ 2014

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2024-2023

وزارة التعليم العالي والبـحـث العـلـمـي
Ministry of Higher Education & Scientific Research

Flow up of implementation syllabus

University:
College: Thi - Qar
Department: Pure Science
Stage:
Lecturer name:
Academic Status:
Qualification:
Place of work:

Course weekly Outline

week	Date		Lab. Experiment Assignments	Notes
1	17/9/2023	Introduction - Essential Functions, Graphing Essential Functions.		
2	24/9/2023	Exponential Functions, Inverse Functions and Logarithms		
3	01/10/2023	The Limit of a Function, Laws of Limit.		
4	08/10/2023	Definition of a Limit, One-Sided Limits and Limits at Infinity,		
5	15/10/2023	Continuity at a Point, Continuity over an interval , Removing discontinuities , Intermediate value theorem		
6	22/10/2023	The Derivative as a Function, Differentiation Rules, Derivatives of Trigonometric Functions		
7	29/10/2023	Mid-term Exam + Second derivatives, Logarithmic differentiation.		
8	05/11/2023	Implicit Differentiation, Derivatives of Inverse Functions, Extreme Values		
9	12/11/2023	The Mean Value Theorem, Curve Sketching, Related Rates , Optimization, Differentials		
10	19/11/2023	Anti-derivatives and Indefinite Integration , The Definite Integral with Riemann Sums ,		
11	26/11/2023	The Fundamental Theorem of Calculus,		

Flow up of implementation syllabus

			University:	
		Indefinite integrals of common functions,	College:	
12	03/12/2023	The Mean Value Theorem for Integrals with its applications.	Department: Stage: Lecturer name:	
13	10/12/2023	Definite integrals of common functions, Integrating using long division and completing the square.	Academic Status: Qualification: Place of work:	
14	17/12/2023	Integrating using trigonometric identities, Integrating by parts and u-substitution.		
15	24/1/2023	Integration by tables, partial fractions and Improper integrals.		
16	31/1/2023	**Exams**		

Half-year Break

Thi - Qar
Pure Science

17	28/1/2024	**Review of the integrals with some applications of integration**		
18	04/2/2024	**Arc length, Area of regions between two curves, center of mass or centroid.**		
19	11/2/2024	**Volume: Disc and Shell methods**		
20	18/2/2024	**The Mean Value Theorem for**		

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University:	
College:	
Department:	
Stage:	
Lecturer name:	
Academic Status:	
Qualification:	
Place of work:	

			Flow up of implementation	follow up of syllabus implementation
21	25/2/2024	Integrals, The Basics of Sequences and Series and Convergence/Divergence Series		
22	03/3/2024	Convergence methods: Ratio, Comparison Test, Alternating Series Test, Absolute Convergence		
23	10/3/2024	The Taylor/Maclaurin Series for a function		
24	17/3/2024	Mid-term Exam + introduction of conic sections.		
25	24/3/2024	Three Degenerate Forms of conic sections: Ellipse, Hyperbola, Parabola.		
26	31/3/2024	Introducing parametric equations and parametric curves,		
27	07/4/2024	Tangents, Area , Arc Length, and Surface Area with Parametric Equations		
28	14/4/2024	Comparing between polar coordinates and Cartesian coordinates as well as some basic graphs in polar coordinates.		
29	21/4/2024	Finding the Area , Arc Length, and Surface Area with Polar Coordinates		
30	28/4/2024	some basic graphs in polar coordinates, and Finding tangent lines of polar curves,		
31	05/5/2024	surface area of a solid obtained by rotating a polar curve, Finding the polar equations for conics		
32	12/6/2024	Exams		

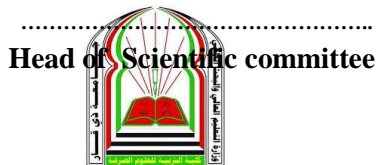تؤيد اللجنة العلمية مطابقة الخطة التدريسية لمفردات منهج المادة الدراسية

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Instructor Signature(Lab.)

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Instructor Signature(Theoretical)

Republic of Iraq
The Ministry of Higher Education & Scientific Research
2024-2023

University:
College:
Department:
Stage:
Lecturer name:
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Academic Status:
Dean
Qualification:
Place of work:

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Head of Scientific committee

وزارة التعليم العالي
والبحث العلمي
Ministry of Higher Education & Scientific Research

Flow up of implementation syllabus

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