

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

Republic of Iraq

The Ministry Of Higher Education
& Scientific Research



University: Diyala

College: Engineering

Department: Chemical Engineering

Stage: Second

Lecturer name: Amal S. Hameed

Qualification: MSc. Mathematics

Place of work: Chemical Eng. Dept.

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Course Instructor	Amal S. Hameed				
E-mail	amalshaker88@yahoo.com				
Title	Mathematics II				
Course Coordinator	Annual				
Course Objective	this is a basic lectures for a high-level course in process engineering mathematics , to make the student deal with various kinds of problems (e.g., volumes, area, and moments and solution of various kinds of equations, vectors, system of equations,)				
Course Description	The scope of coverage includes vectors, eq. of plane, functions of several variables , PDE and it's solution, Multiple integrals, inverse integral, change of multiple integral to polar coordinates, series, ODE (separable, homogenous, linear, exact, Bernolli, n^{th} order ODE , variation of parameters, undetermined coefficients, general solution by D-operator)				
Textbook	<p>1- R.L. Finney and G.B. Thomas, "Calculus", (1990).</p> <p>2- E. Kriezyg " Advanced Engineering Mathematics" (1997).</p> <p>3- R. Coddington "Differential equations with applications", (1970).</p>				
Course Assessments	Term Tests	Laboratory	Quizzes	Project	Final Exam
	As (30%)	-----	As (5%)	----	As (60%)
General Notes	Type here general notes regarding the course				

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Course Weekly Outline

Week	Date	Topes Covered	Lab. Experiment Assignments	Notes
١	٢٢,٢٥-٩-٢٠١٤	Introduction, General classification of differential equations		
٢	٢٩-٩,٢-١٠-٢٠١٤	Solution of ١ st order ODE the methods are: separable, linear and integrating factor		
٣	٦,٩-١٠-٢٠١٤	The methods exact, homogenous, Bernolli equation		
٤	١٣,١٦-١٠-٢٠١٤	Solution of ٢nd order ODE the methods are: inspired guessing, vaiation of parameters		
٥	٢٠,٢٣-١٠-٢٠١٤	the method undetermined coefficients		
٦	٢٧,٣٠-١٠-٢٠١٤	Exam + equations of several variables and chain rule		
٧	٣,٦-١١-٢٠١٤	Maxima and minima values		

8	10,13-11-2014	Abs. max and min and vector function in space		
9	17,20-11-2014	Directional derivative and rate of change		
10	24,27-11-2014	Tangent plane and normal lines for surface		
11	1,4-12-2014	The method of Lagrange multipliers for one and two constraints		
12	8,10-12-2014	solution of pde		
13	10,17-12-2014	Exam+ vectors(equation of line, projection)		
14	22,24-12-2014	Vectors (equation of plane, projection, planes intersection)		
15	29,31-12-2014	Exam + Multiple integrals		
16	5,7-1-2015	Multiple integrals (double integral, area, volume)		
Half – year break				
17	16,18-2-2015	Triple integral (volume and hyper-volume)		
18	24,25-2-2015	Change of variables to polar coordinates		
19	3,4-3-2015	Exam+ sequences		
20	10,11-3-2015	Series		
21	17,18-3-2015	Convergent tests of series		
22	24,25-3-2015	Exam		
23	31-3,1-4-2015	Conic sections		
24	7,8-4-2015	Conic sections +Exam		
25	14,15-4-2015	Matrices and determinants		
26	21,22-4-2015	Matrices and determinants		
27	28,29-4-2015	Exam+ Laplace transform		

۲۸	۵,۶-۵-۲۰۱۵	Laplace transform		
۲۹	۱۲,۱۳-۵-۲۰۱۵	Inverse Laplace transform		
۳۰	۱۹,۲۰-۵-۲۰۱۵	Applying Laplace transform to solve ode with different orders		
۳۱	۲۶,۲۷-۵-۲۰۱۵	General solution of ODE using D-operator		

INSTRUCTOR Signature:

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