

Republic of Iraq
The Ministry of
Higher Education
&Scientific Research

بسم الله الرحمن الرحيم



University: Kerbala
College: Education for Pure Sciences
Department: physics
Stage: second
Lecturer name: Ahmed kheralla
shaheed
Qualification:Ph.D
Place of work: kerballa

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Course Instructor	Dr.Ahmed kheralla shaheed				
E-mail	Ahmed2008edu@yahoo.com				
Title	Analytical mechanics				
Course Coordinator					
Course Objective	To learn the students the principles in physics for advance analytical mechanics and astronomy.				
Course Description	The subject contents the mechanics and mathematical physics and its application in earth				
Textbook	Analytical mechanics.by Grant R.Fowles (second edition)1970				
Course Assessments	Term Tests	Laboratory	Quizzes	Project	Final Exam
	(30%)	(0%)	(20%)	—	(50%)
General Notes					

Course weekly Outline

Week	Date	Topics Covered	Lab. Experiment Assignments	Note
1	3/10/2017	CH1:Fundamental concepts of vectors		
2	10/10/2017	Physical quantities and units		
3	17/10/2017	Notation. Formal Definitions and Rules		
4	24/10/2017	Vector Algebra		
5	31/10/2017	Distributive law and-		
6	7/11/2017	Magnitude of vector		
7	14/11/2017	Unit coordinate vector		
8	21/11/2017	Position vector of a particle		
9	28/11/2017	Velocity and acceleration in rectangular coordinate		
10	5/12/2017	Velocity and acceleration in plane polar coordinate		
11	12/12/2017	CH2:Newtons laws of motion		
12	19/12/2017	Linear momentum		
13	26/12/2017	Rectilinear motion uniform acceleration-		
14	2/1/2018	-under a constant force		
15	9/1/2018	Forces that depend on position		
16	16-30/1	The forces as a function of time		
Half – year Break				
17	13/2/2017	CH3:the harmonic oscillator		
18	20/2/2018	Linear Restoring force		
19	6/3/2018	Energy consideration in harmonic motion		
20	13/3/2018	Examples		
21	20/3/2018	Damped harmonic motion		
22	27/3/2018	Energy considerations		
23	3/4/2018	Examples		
24	10/4/2018	CH4:General motion of a particle in three dimension		
25	17/4/2018	Introduction-general principles		
26	24/4/2018	Conservative forces and forces fields		
27	1/5/2018	The potential energy function in three dimension		
28	8/5/2018	Forces of separable type projectile		

		motion		
29	15/5/2018	CH5:non inertial References system		
30	22/5/2018	Rotating coordinate systems		
31	25/5/2018	Dynamic of a particle in rotating coordinate		
32	26/5/2018	Effects of the earth' s rotation		