

Planning and Quality Assurance Affairs

Form (A)

Course Specifications

General Information

Course name	Classical Mechanics(2)
Course number	PHYS3316
Faculty	
Department	
Course type	College Needs
Course level	3
Credit hours (theoretical)	3
Credit hours (practical)	0
Course Prerequisites	

Course Objectives

1 - The dynamics of systems of particles
2 - Lagrangian and Hamiltonian formulation of mechanics
3 - Stability of Circular Orbit
4 - Kinematics of Elastic Collision and Cross Sections
5 - Motion in Noninertial Reference Frame
6 - Dynamics of Rigid Bodies
7 - Coupled Oscillations

Intended Learning Outcomes

Knowledge and Understanding	* understand and apply Lagrange's equations to simple physical systems. * Solve dynamical problems involving classical particles by using the Lagrangian and Hamiltonian formulation .
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Course Contents

1 - Lagrangian Mechanics
2 - Dynamics of System of Particles
3 - Dynamics of Rigid Bodies
4 - Coupled Oscillations
5 - kinematics of collisions
6 - motion in a noninertial reference frame
7 - stability of circular orbits

Teaching and Learning Methods

1 - lecturing and homeworks

Students Assessment

<u>Assessment Method</u>	<u>TIME</u>	<u>MARKS</u>
two Midterms	60 minute each	40
quiz		10

Books and References

Essential books	J.B. Marion and S.T. Thornton ,“Classical Dynamics of Particles and Systems” 5th ed. ,2003 – standard undergraduate introductory textbook
Recommended books	L.D. Landau & E.M. Lifschitz, “Mechanics”, Pergamon, 1976 K. R. Symon, “Mechanics”, 3rd ed. K. R. Symon, “Mechanics”, 3 ed. , Addison-Wesley, 1971.