Date	Mtg.#	Reading Assignment	Topic	HW Due	Exams
TENTATIVE SCHEDULE FOR PHYSICS 410, Fall 2013					
Week 1					
9/3	1	1: Newton's Laws of Motion	Introduction, conceptual review of mechanics		
9/5	2	1	Math review, vector equations etc., Drag Forces	#0	
Week 2					
9/10	3	2: Projectiles and Charged Particles	Drag, Analytical solutions for projectile motion		
9/12	4	2	Charged particle in B, E fields	#1	
Week 3					
9/17	5	3: Momentum and Angular Momentum	Rockets, angular momentum, moment of inertia		
9/19	6	4: Energy	Impulse, work, kientic, and potential energy	#2	
Week 4					
9/24	7	4	Energy conservation and applications, damped oscillators		
9/26	8	5: Oscillations	Driven damped oscillators, resonance, Frequency domain analysis a	#3	
Week 5					
10/1	9	9: Mechanics in Noninertial Frames	Apparent forces in accelerating and rotating frames		
10/3	10	9	Describing rotational motion and dynamics	#4	
Week 6					
10/8	11	6: Calculus of Variations	Euler-Lagrange equation, The brachistochrone		
10/10	12	7: Lagrange's Equations	Lagrange's Equations; basic applications	#5	
Week 7					
10/15	13	7	More applications of Lagrange's equations / Review		
10/17	14	1-6, 9	**Chapters 1-6, 9 (roughly)**		**EXAM #1**
Week 8					
10/22	15	7	Lagrangian Problem Solving, Constraints and conservation laws		
10/24	16	8: Two-Body Central Force Problems	Equivalnet one-dimensional problem, Conservation of ang. mom.	#6	
Week 9					
10/29	17	8, 14	All about orbits; Impact parameter and scattering angle		
10/31	18	14: Collision Theory	Total and differential cross sections; Rutherford scattering	#7	
Week 10					
11/5	19	13: Hamiltonian Mechanics	Hamilton's equations		
11/7	20	13	Applications of Hamiltonian mechanics	#8	
Week 11					
11/12	21	10: Rotational Motion of Rigid Bodies	Total angular momentum; rotation about a fixed axis		
11/14	22	10	The moment-of-inertia tensor, precession of a top	#9	
Week 12					
11/19	23	11: Coupled Oscillators and Normal Modes	Linear examples; coupled modes / Review		
11/21	24	7-8, 13-14	**Chapters 7-8, 10, 13-14**		**EXAM #2**
Week 13					
11/26	25	11	The double pendulum and other examples		
11/28		**THANKSGIVING**	THANKSGIVING!		
Week 14					
12/3	26	12: Nonlinear Dynamics and Chaos	Period doubling; chaos		
12/5	27	12; 15: Special Relativity	State-space orbits and Poincare sections; Postualtes; time dilation; le	#10	
Week 15					
12/10	28	15	Relativistic momentum and energy		
12/12	29	15	Relativistic Dynamics, Review and discussion	#11	
12/17	30	Comprehensive Chaps. 1 through 15	**FINAL EXAM [8 AM to 10 AM]**		**FINAL EXAM**