

Syllabus for Physics 61: Introductory Mechanics

	TOPIC	LECTURES (Lines indicate weekends)	READING	LAB/REC
<b>STATICS</b>	Force	7 Jan 03 Intro -- types of forces	Handout	REC: Assessment
		9 Jan 03 Force as a vector		LAB 1: Force Table
		12 Jan 03 Third law -- free body diag		REC: HW #1
		14 Jan 03 Vector force balance, $W=mg$		
	Torque	16 Jan 03 Torque and cross product		LAB 2: Crane
		19 Jan 03 <b>MLK Holiday</b>		
		21 Jan 03 Torque balance (vector version)	HW #2 Due	
	Pressure	23 Jan 03 Torque due to gravity, COM	LAB 3: Torque balance	
		26 Jan 03 Pressure and buoyancy	HRK15	REC: HW #3
		28 Jan 03 SI units, Scope of dynamics	HRK 1	
30 Jan 03 <b>EXAM I</b>			NO LAB	
<b>DYNAMICS</b>	Kinematics / Second Law	2 Feb 03 xva	HRK 2	REC: Exam Review
		4 Feb 03 $F=ma$ ; Projectile motion	HRK 3,4,5	
		6 Feb 03 Circular motion		LAB 4: Free fall
		9 Feb 03 Sliding friction		REC: HW #4
	Linear moment	11 Feb 03 Momentum: Collisions	HRK 6,7	
		13 Feb 03 Momentum: Impulse, conservation		LAB 5: Collisions
	Rotation	16 Feb 03 Angular velocity and acceleration	HRK 8	REC: HW #5
		18 Feb 03 Rotational inertia	HRK 9	
		20 Feb 03 Combined rotation and translation		LAB 6: Rotation
	Angular mome	23 Feb 03 Angular momentum of a particle	HRK 10	REC: HW #6
		25 Feb 03 Angular momentum of a rigid body		
		27 Feb 03 Conservation of angular momentum		LAB 7: Error analysis
	Work	1 Mar 03 Concepts of work, energy, power	HRK 11	REC: HW #7
		3 Mar 03 Work: Variable force and dot product		
		5 Mar 03 <b>EXAM II</b>		NO LAB
		<b>SPRING BREAK</b>		
	Energy	15 Mar 03 Kinetic energy (translational)		REC: Exam Review
		17 Mar 03 Kinetic energy (rotational)		
		19 Mar 03 Potential energy	HRK 12	NO LAB
		22 Mar 03 Energy conservation	HRK 13	REC: HW #8
<b>APPLICATIONS</b>	Mechanical sys	24 Mar 03 Example analysis (Bicycle?)	HRK 1-13	
		26 Mar 03 Example analysis (Swingset?)		LAB 8: Energy conserv.
	Gravity	29 Mar 03 Universal Gravitation	HRK 14	REC: HW #9
		31 Mar 03 Accelerating frames: weightlessness	(HRK 5.6)	
		2 Apr 03 Centrifugal force; Tidal forces		LAB 9: Fun stuff
	Oscillators	5 Apr 03 SHO: Basic phenomenology	HRK 17	REC: HW #10
		7 Apr 03 Damped and driven		
		9 Apr 03 Coupled oscillators		LAB 10: Resonance
	Nonlinearity	12 Apr 03 Nonlinear -- bistability	MATLAB	REC: HW #11
		14 Apr 03 Nonlinear -- chaos		
		16 Apr 03 <b>EXAM III</b>		NO LAB
	Review	19 Apr 03 Waves on String		REC: Exam Review
		21 Apr 03 Waves on String		
<b>EXAM</b>		FINAL		