

Physics 121 Course Schedule

Fall 2012 — Professor Shawhan

	<i>HW due*</i>	<i>Lecture topic</i>	Book sections for 1st edition	<i>Tutorial</i>	<i>Lab</i>
Aug 29		All about the course			
Aug 31	Warm-up 0	Representing position and motion	1.1–1.3		
Sep 3		** Labor Day — No class **			
Sep 5		Graphing motion; Acceleration	2.1–2.4		
Sep 7	HW 1	The case of constant acceleration	2.5–2.7	** Tutorials and labs begin Sep 10: **	
Sep 10		Relative motion; Units; Uncertainty	3.5; 1.4	Interpreting graphs and equations	Reaction Time
Sep 12		Forces and mass: Newton's laws	4.1–4.2, 4.5–4.6		
Sep 14	HW 2	Springs, strings, and atoms	4.3–4.4, 8.3		
Sep 17		Solving problems with Newton's laws		Newton's third law	Grandfather Clock, part 1
Sep 19		Newton's third law	4.8, 5.7		
Sep 21	HW 3	Apparent weight	5.3		
Sep 24		Drag	5.6	Reconciling common sense and Newton's laws	Grandfather Clock, part 2
Sep 26	HW 4	Review and discussion			
Sep 28		Exam 1			
Oct 1		Vectors in physics; Sideways accel.	3.1–3.3	Velocity and acceleration in two dimensions	Let it Roll
Oct 3		Newton's laws in 2-D	4.7; 3.6–3.8		
Oct 5	HW 5	Using Newton's laws in 2-D	5.2, 5.4, 5.8		
Oct 8		Friction	5.5	The purpose of free-body diagrams	Let it Slide, part 1
Oct 10		Circular motion and forces	6.3–6.4		
Oct 12	HW 6	Gravity and orbits	6.5–6.7		
Oct 15		Impulse and momentum	9.1–9.3	Relating equations to common sense: "Oomph"	Let it Slide, part 2
Oct 17		Conservation of momentum	9.4–9.6		
Oct 19	HW 7	Work, energy, and power	10.1–10.4, 10.10		
Oct 22		Kinetic and potential energy	10.5, 10.6	Work and energy	No Free Launch, part 1
Oct 24		Conservation of energy	10.7, 10.8		
Oct 26	HW 8	Review and discussion			
Oct 29		Exam 2		Common sense and equations: Torque	No Free Launch, part 2
Oct 31		Rotational motion and torque	7.1–7.3		
Nov 2		Rotational dynamics	7.4–7.6, 9.7, p. 312		
Nov 5	HW 9	Equilibrium and balance	8.1, 8.2	Properties of matter	Roller Coaster, part 1
Nov 7		Elasticity and strength of materials	8.4		
Nov 9		Linear response systems			
Nov 12	HW 10	Density and pressure in fluids	13.1–13.3	Making sense of pressure in a liquid	Roller Coaster, part 2
Nov 14		Buoyancy; Fluids in motion	13.4, 13.5		
Nov 16		Viscosity and fluid flow in tubes	13.6, 13.7		
Nov 19	HW 11	Thermal energy and temperature	11.4, 11.5 (part)	** No tutorial or lab **	
Nov 21		Gas pressure and the ideal gas law	12.1, 12.3		
Nov 23		** Thanksgiving holiday — No class **			
Nov 26		Gas processes; Thermal expansion	12.4, 12.2	Gases in containers	Gravity, part 1
Nov 28	HW 12	Review and discussion			
Nov 30		Exam 3			
Dec 3		Energy usage in living systems	11.1–11.3	Heat and temperature	Gravity, part 2
Dec 5		Heat flow	11.5, 12.8		
Dec 7		Using thermal energy; Entropy	11.6–11.9		
Dec 10	HW 13	Course discussion and review		** No tutorial or lab **	
Dec 19		Final Exam: 8:00–10:00 a.m.			