August **WEEK** Tuesdav Thursday Motion diagrams (cont'd); units and significant figures; Introduction; Force Concept Inventory; motion diagrams 2] Experiment 1: Investigating Motion 1: Position and Velocity **BEFORE CLASS: BEFORE CLASS:** Read: Read: • Knight: Preface to the Student; Introduction; Part I overview; • Knight: § 1.7 – 1.9 § 1.1 – 1.6 • SPIRAL 1.3: motion worksheets (introduction) Problems: • Lab: Experiment 1, Lab Note C • WB 1: 1, 3, 5, 6, 8, 10, 11, 15, 18, 20, 21, 24, 26, 27, 29, 33 Problems: **AFTER CLASS:** • WB 1: 35, 37, 38, 40, 41 Required: **AFTER CLASS:** • Knight 1: 4, 7 Required: • SPIRAL 1.1: all • Knight 1: 21, 23, 27, 29, 31, 39*, 45, 51 Additional Practice: • SPIRAL 1.2: all; 1.3*: 1, 3, 5, 7, 8, 11, 13 • Knight 1: 13, 14, 15, 16 Additional Practice: • Knight 1: 24, 26, 28, 33, 35*, 37*, 42*, 43*, 44*, 52 • SPIRAL 1.3*: 2, 4, 6, 9, 10, 12, 14 Interpreting motion graphs; kinematic concepts; Experiment **TEST 1 (Chapter 1)** 1 (finish) Solving kinematic problems; Experiment 2: Investigating Motion 2: Velocity and Acceleration **BEFORE CLASS: BEFORE CLASS:** Read: Read: • Knight: § 2.1 – 2.4 • Knight: § 2.5 – 2.6, 2.8 Problems: • Lab: Experiment 2 • WB 2: 1, 3, 5, 8, 11, 12, 14, 15, 16 Problems: **AFTER CLASS:** • WB 2: 18, 19, 20, 21, 23, 24, 28 Required: **AFTER CLASS:** • Knight 2: 1, 3, 9, 11, 13, 17, 29 Required: • SPIRAL 2.1: 1, 4 • Knight 2: 25, 31, 53, 55, 73 • SPIRAL 2.2: 1, 2, 9, 10 • SPIRAL 2.3: 1, 3, 5, 7, 8, 11, 13 Additional Practice: Additional Practice: • Knight 2: 29, 49, 57, 60, 63, 66, 77, 79, 83 • Knight 2: 7, 15a & c, 37 • SPIRAL 2.3: 2, 4, 6, 9, 10, 12, 14 • SPIRAL 2.1: 2, 3 SPIRAL 2.2: 3, 4, 5, 6, 7, 8 2007

	tember	
WEEK	Tuesday	Thursday
3	 Vectors; Experiment 2 (finish) BEFORE CLASS: Read: Knight: § 3.1 – 3.3 Problems: WB 3: 1, 3, 6, 7, 8, 9, 11, 13, 16, 19, 24 AFTER CLASS: Required: Knight 3: 2, 5, 7, 9, 23a & b, 29 SPIRAL 3: all Additional Practice: Knight 3: 3, 4, 8, 11 	 Vector algebra; <u>Experiment 3: Vector Forces</u> BEFORE CLASS: <u>Read:</u> Knight: § 3.4 Lab: <u>Experiment 3</u> Problems: WB 3: 27, 29, 31, 33, 34, 36 AFTER CLASS: <u>Required:</u> Knight 3: 13, 17, 21, 25, 37, 39, 47 Additional Practice: Knight 3: 15, 19, 23c, 24, 31, 33, 35, 41, 45, 49
4	 11 TEST 2 (Chapters 2-3) Force and motion; Experiment 3: (finish) BEFORE CLASS: Read: Knight: § 4.1 – 4.6 Problems: WB 4: 2, 3, 4, 6, 7, 8, 9, 11, 14, 17, 18, 19, 20, 21, 22, 23 AFTER CLASS: Required: Knight 4: 2, 3, 5, 9, 13, 14, 23, 25, 27, 29 Additional Practice: Knight 4: 1, 4, 6, 7, 10, 11, 12, 22, 24, 26, 28 	 13 Free-body diagrams; <u>Experiment 4: Modeling Motion</u> BEFORE CLASS: <u>Read:</u> Knight: § 4.7 Lab: <u>Experiment 4</u>; Lab Note D <u>Problems:</u> WB 4: 25, 26, 27, 28, 29 <u>AFTER CLASS:</u> <u>Required:</u> Knight 4: 17, 21, 31, 35, 37, 39, 45, 49 SPIRAL 4.1: all <u>Additional Practice:</u> Knight 4: 15, 18, 19, 20, 30, 32, 33, 34, 36, 38, 40, 41, 43, 44, 47

September

WEEK	Tuesday	Thursday
	18 Equilibrium; Newton's second law; Experiment 5: Force and Motion	20 Friction and drag; examples of Newton's second law; Experiment 5: (finish)
5	BEFORE CLASS: Read: • Knight: § 5.1 – 5.3 • Lab: Experiment 5 Problems: • WB 5: 1, 2, 4, 5, 6, 7, 9, 11, 14, 16, 17, 19, 21, 23, 25 AFTER CLASS: Required: • Knight 5: 1, 5, 7, 9, 11, 13, 27, 29, 31, 33, 57 • SPIRAL 4.2: 1, 2 • SPIRAL 5: 3, 4, 6, 7 Additional Practice: • Knight 5: 2, 3, 4, 6, 8, 10, 12, 14, 25, 37 • SPIRAL 5: 1, 2, 5, 8	BEFORE CLASS: Read: • Knight: § 5.4 – 5.6 Problems: • WB 5: 27, 28, 29, 30, 31 AFTER CLASS: Required: • Knight 5: 17, 21, 39, 41, 49, 63 • SPIRAL 5: 13, 16, 19, 23, 26, 28 Additional Practice: • Knight 5: 15, 19, 23, 35, 45, 47, 51, 53, 65 • SPIRAL 5: 14, 15, 17, 18, 20, 21, 22, 24, 25, 27, 29, 30 Challenge Problems: • Knight 5: 73
6	$\begin{array}{llllllllllllllllllllllllllllllllllll$	27 TEST 3 (Chapters 4-5) Projectile motion (cont'd); relative velocity; Experiment 6 (finish) BEFORE CLASS: Read: • Knight: § 6.4 Problems: • WB 6: 15, 16, 17, 19, 20 AFTER CLASS: Required: • Knight 6: 13, 17, 23, 33, 41, 43, 53, 61 • SPIRAL 6: 9, 10, 12, 13, 15 Additional Practice: • Knight 6: 15, 16, 34, 39, 55, 57 • SPIRAL 6: 11, 14 Challenge Problems: • Knight 6: 67, 69

October

WEEK	Tuesday	Thursday
	2 Relative velocity (cont'd); motion in a circle; Experiment 7: <u>Motion in Two Dimensions</u>	Dynamics of circular motion; Experiment 7 (finish)
7	BEFORE CLASS: Read: • Knight: § 7.1 – 7.2 • Lab: Experiment 7 Problems: • WB 7: 1, 2, 3, 5 AFTER CLASS: Required: • Knight 7: 3, 5, 7, 9 Additional Practice: • Knight 7: 1, 2, 4, 6, 8, 10	BEFORE CLASS: Read: • Knight: § 7.3 Problems: • WB 7: 7, 8, 9, 10, 11 AFTER CLASS: Required: • Knight 7: 11, 17, 31, 37 • SPIRAL 7: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 Additional Practice: • Knight 7: 33, 35, 39, 45, 42, 47, 50 • SPIRAL 7: 12 Challenge Problems: • Knight 7: 60, 63, 64, 65
8	 Orbit; fictitious forces and apparent weight; Experiment 8: Dynamics of Circular Motion BEFORE CLASS: Read: Knight: § 7.4 – 7.6 Lab: Experiment 8 Problems: WB 7: 16, 18, 19, 21 AFTER CLASS: Required: Knight 7: 19, 31 Additional Practice: Knight 7: 20, 30 	11 Newton's third law; Experiment 8 (finish) BEFORE CLASS: <u>Read:</u> Knight: § 8.1 – 8.3 <u>Problems:</u> WB 8: 1, 2, 4, 5, 7, 9, 10, 11, 12, 15, 17, 18, 20 AFTER CLASS: <u>Required:</u> Knight 8: 1, 3, 6, 9, 25 SPIRAL 8.1: all (identify all action-reaction pairs) <u>Additional Practice:</u> Knight 8: 5, 7, 8, 10, 21 <u>Challenge Problems:</u> Knight 8: 48, 49

October **WEEK** Tuesdav Thursday **TEST 4 (Chapters 6-7)** Momentum and impulse; Experiment 9: Impulse and 18 Ropes and pulleys; interacting systems; problem session Momentum **BEFORE CLASS: BEFORE CLASS:** Read: Read: • Knight: § 9.1 – 9.2 • Knight: § 8.4 – 8.5 Problems: • Lab: Experiment 9 • WB 8: 21, 22, 23, 24, 25, 26, 27, 28, 29, 31, 32, 34 Problems: 9 • WB 9: 1, 3, 4, 6, 8, 9, 10, 12, 13 **AFTER CLASS:** Required: **AFTER CLASS:** • Knight 8: 11, 15, 35, 41 Required: • SPIRAL 8.2: 1, 2, 3, 4, 5, 6, 8, 10, 15, 17, 20, 21 • Knight 9: 1, 5, 7, 11, 26, 27, 29, 31 Additional Practice: • SPIRAL 9: 1, 3 • Knight 8: 20, 23, 26, 27, 31, 32, 34, 36, 38, 39, 42, 44, 45 Additional Practice: • SPIRAL 8.2: 7.9, 11, 14, 16, 18, 19 • Knight 9: 2, 3, 6, 8, 10, 28 Challenge Problems: • SPIRAL 9: 2, 4 • Knight 8: 50 25 23 10 CLASSES CANCELLED DUE TO FIRES CLASSES CANCELLED DUE TO FIRES 2007

Oct / Nov

WEEK	Tuesday	Thursday
	30 Conservation of momentum; collisions and explosions; Momentum in two dimensions; Experiment 9 (cont'd)	Conservation of energy; kinetic and gravitational potential energy; <u>Experiment 9 (finish)</u>
11	BEFORE CLASS: Read: • Knight: § 9.3 – 9.5; (§ 9.6) Problems: • WB 9: 14, 16, 17, 19, 20; (21, 23) AFTER CLASS: Required: • Knight 9: 13, 15, 19, 33, 35, 39, 43, 51; (37, 55) • SPIRAL 9: 5, 8, 9, 10, 11, 12, 13, 16, 18, 19, 23; (25, 26, 27, 28) Additional Practice: • Knight 9: 14, 32, 38, 40, 41, 42, 49, 53; (36, 56, 57) • SPIRAL 9: 6, 7, 17, 20, 21, 22, 24 Challenge Problems: • Knight 9: 67, 71, 72; (66)	BEFORE CLASS: Read: • Knight: § 10.1 – 10.3 Problems: • WB 10: 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 AFTER CLASS: Required: (for each problem, draw energy bar charts where appropriate • Knight 10: 3, 7, 9, 35, 42a, 53 • SPIRAL 10: 3, 5 Additional Practice: • Knight 10: 1, 2, 5, 6, 11, 13, 33, 50, 54, 55 • SPIRAL 10: 4 Challenge Problems: • Knight 10: 74
	6 TEST 5 (Chapters 8-9 thru 9.5 only) Hooke's Law; elastic potential energy	8 Energy diagrams; work; Experiment 10: Conservation of momentum in 2D
12	BEFORE CLASS: Read: • Knight: § 10.4 – 10.5 • Lab: Experiment 10 Problems: • WB 10: 15, 17, 19, 20, 21, 22 AFTER CLASS: Required: • Knight 10: 15, 19, 23, 39, 49 • SPIRAL 10: 1, 2, 6, 7, 8, 9, 10 Additional Practice: • Knight 10: 14, 17, 20, 24, 45, 47, 56, 63 Challenge Problems: • Knight 10: 69, 70	BEFORE CLASS: Read: • Knight: § 10.7, 11.1 – 11.4 Problems: • WB 10: 25, 26, 27 • WB 11: 1, 2, 3, 4, 5, 7, 8, 10, 11, 13, 14 AFTER CLASS: Required: • Knight 10: 29, 31, 61 • Knight 11: 1, 3, 5, 7, 9, 11, 13, 15 Additional Practice: • Knight 10: 30, 60, 62 • Knight 11: 2, 4, 6, 8, 10, 12, 14

November

WEEK	Tuesday	Thursday
	13 Work and potential energy; conservation of energy; power; Experiment 10 (finish)	15 Gravity; problem session
13	BEFORE CLASS: Read: • Knight: § 11.5 – 11.9 Problems: • WB 11: 15, 16, 17, 19, 20, 24, 25 AFTER CLASS: Required: • Knight 11: 17, 19, 23, 25, 35, 41, 53 • SPIRAL 11: 1, 4, 6, 11, 12, 14, 18, 19, 21, 22, 24 Additional Practice: • Knight 11: 20, 21, 22, 27, 39, 43, 44, 45, 47, 49, 51, 54 • SPIRAL 11: 2, 3, 5, 7, 9, 10, 13, 15, 16, 17, 20, 24 Challenge Problems: • Knight 11: 57, 72, 73	BEFORE CLASS: Read: • Knight: § 12.1 – 12.4 Problems: • WB 12: 1, 2, 3, 5, 6 AFTER CLASS: Required: • Knight 12: 7, 9, 13, 35, 39a Additional Practice: • Knight 12: 1, 3, 6, 11, 12, 29, 33, 34, 38, 51
14	 TEST 6 (Chapters 10-11) Gravitational potential energy; orbits; problem session BEFORE CLASS: Read: Knight: § 12.5 – 12.6 Problems: WB 12: 8, 9, 11 AFTER CLASS: Required: Knight 12: 15, 17, 21, 27, 37, 41, 43, 49, 55, 61 Additional Practice: Knight 12: 16, 19, 22, 23, 24, 29, 36, 39b, 42, 44, 45, 47, 54, 62, 64, 65 Challenge Problems: Knight 12: 72, 73, 74, 76 	22 Thanksgiving Holiday <u>NO CLASS</u>

Nov / Dec **WEEK** Tuesdav Thursday Rotational kinematics and torque; Experiment 11: Torques Rotational dynamics and static equilibrium; Experiment 11 and Static Equilibrium (finish) **BEFORE CLASS: BEFORE CLASS:** Read: Read: • Knight: § 13.1 – 13.3 • Knight: § 13.4 – 13.6 • Lab: Experiment 11 Problems: Problems: • WB 13: 14, 15, 16, 17, 18, 20, 22, 23, 25, 26, 27 15 • WB 13: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13 **AFTER CLASS: AFTER CLASS:** Required: Required: • Knight 13: 19b & c, 21, 23, 27, 57, 59, 67, 69, 75 • Knight 13: 3, 5, 7, 11, 14, 15, 49 Additional Practice: Knight 13: 17b, 24, 25, 26, 54, 56, 58, 60, 64, 68 Additional Practice: • Knight 13: 1, 2, 4, 6, 8, 12, 13, 48 Rotational energy and rolling; problem session Vector description of rotation; conservation of angular 4 6 momentum; Force Concept Inventory **BEFORE CLASS: BEFORE CLASS:** Read: Read: • Knight: § 13.7 – 13.8 • Knight: § 13.9 – 13.10 Problems: Problems: • WB 13: 28, 29, 30, 31 • WB 13: 33, 35, 36, 37, 38, 39 16 **AFTER CLASS: AFTER CLASS:** Required: Required: • Knight 13: 29, 31, 33, 65, 71, 77, 83 • Knight 13: 35, 39, 41, 47, 79, 82 Additional Practice: Additional Practice: • Knight 13: 28, 30, 32, 34, 73 • Knight 13: 37, 38, 40, 42, 43, 46, 80 Challenge Problems: Challenge Problems: • Knight 13: 84, 85 Knight 13: 87, 88 2007

	cmeber	
WEEK	Tuesday	Thursday
	11 Final Exam Week	1 2 Final Exam Week
		13 Final Exam Week
	FINAL EXAM (Chapters 12-13 new; cumulative) 5:00 pm – 7:00 pm	NO CLASS
17		
17		
		2007

*A numerical solution for these problems is not required. DO NOT do any calculations.

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