

Lehigh University
Physics 21 Schedule and Assignments
Spring, 2009

January 5, 2009
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Date	Class	Topics Covered	Reading	Homework*
Week 1				
1-13 (Tu)	Lect-1	Electric charge, conductors, insulators, Coulomb's law, charge conservation		
1-14 (W)	Rec-1	Work sample problems; go over HW-1	21 §1–6	HW-1 due
1-15 (Th)	Lect-2	Electric fields due to point charges and distribution of charges using vectors	22 §1–7	HW-2 due
1-16 (F)	Rec-2	Quiz 1 ; Treat charges in electric field; go over HW-2	22 §8–9	
Week 2				
1-20 (Tu)	Lect-3	Gauss's Law	23 §1–6	HW-3 due
1-21 (W)	Rec-3	Applying Gauss's law; go over HW-3	23 §7–9	
1-22 (Th)	Lect-4	Electric potential and potential due to charges	24 §1–7	HW-4 due
1-23 (F)	Rec-4	Quiz 2 ; Potential due to charge distribution; go over HW-4	24 §8–9	
Week 3				
1-27 (Tu)	Lect-5	Electrical energy and capacitance	24 §10–12 25 §1–3	HW-5 due
1-28 (W)	Rec-5	Work examples; go over HW-5	25 §4, 5	
1-29 (Th)	Lect-6	Dielectrics, electric current, Ohm's law	25 §6, 7; 26 §1–6	HW-6 due
1-30 (F)	Rec-6	Quiz 3 ; Work examples; go over HW-6	26 §7–9	
Week 4				
2-3 (Tu)	Lect-7	Circuits, Kirchhoff's rules	27 §1–6	HW-7 due
2-4 (W)	Rec-7	Work examples; go over HW-7	27 §7–8	
2-5 (Th)	Lect-8	RC circuits	27 §9	HW-8 due
2-6 (F)	Rec-8	Quiz 4 ; Go over HW-8; review and answer questions		
Week 5				
2-10 (Tu)	Exam I	FIRST HOUR EXAM February 10		
2-11 (W)	Rec-9	Go over Exam I and HW-9		(HW-9 due)
2-12 (Th)	Lect-10	Magnetic fields	28 §1–5	HW-10 due
2-13 (F)	Rec-10	Work examples and HW-10	28 §6, 7	
Week 6				
2-17 (Tu)	Lect-11	Torques on current loops; magnetic fields due to currents sources, Biot-Savart law	28 §8–10; 29 §1–3	HW-11 due
2-18 (W)	Rec-11	Work examples; go over HW-11		
2-19 (Th)	Lect-12	Ampere's law; current-carrying coils	29 §4–6	HW-12 due
2-20 (F)	Rec-12	Quiz 5 ; Go over HW-12		
Week 7				
2-24 (Tu)	Lect-13	Induction; Faraday's law	30 §1–5	HW-13 due
2-25 (W)	Rec-13	Work example problems ; go over HW-13		
2-26 (Th)	Lect-14	Induced electric fields	30 §6–8	HW-14 due
2-27 (F)	Rec-14	Quiz 6 ; Work exaples; go over HW-14 SPRING BREAK, March 2-6, 2009		

*Solutions to homework problems must be submitted using WileyPLUS (www.wileyplus.com).

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Week 8				
3-10 (Tu)	Lect-15	Energy in magnetic field; inductance	30 §9–12	HW-15 due
3-11 (W)	Rec-15	Work examples; go over HW-15		
3-12 (Th)	Lect-16	Electromagnetic oscillation	31 §1-7	HW-16 due
3-13 (F)	Rec-16	Quiz 7 ; Go over HW-16		
Week 9				
3-17 (Tu)	Lect-17	Steady state AC circuits; displacement current	31 §8-11 32 §1–4	HW-17 due
3-18 (W)	Rec-17	Work examples; go over HW-17		
3-19 (Th)	Lect-18	Magnetic materials	32 §6-11	HW-18 due
3-20 (F)	Rec-18	Quiz 8 ; Go over HW-18		
Week 10				
3-24 (Tu)	Lect-19	Mechanical waves; Superposition of waves	Mechanical waves (handout)	HW-19 due
3-25 (W)	Rec-19	Work examples; go over HW-19		
3-26 (Th)	Lect-20	Superposition of waves; Light as Electromagnetic waves	Mechanical waves; 33 §1-3	HW-20 due
3-27 (F)	Rec-20	Quiz 9 ; Go over HW-20; review and answer questions		
Week 11				
3-31 (Tu)	Exam II	SECOND HOUR EXAM on March 31		
4-1 (W)	Rec-21	Go over HW-21		HW-21 due
4-2 (Th)	Lect-22	Reflection and refraction: Snell's Law Geometric optics I	33 §8-10; 34 §1–6	HW-22 due
4-3 (F)	Rec-22	Go over Exam II and HW-22		
Week 12				
4-7 (Tu)	Lect-23	Geometric optics II	34 §7-9	HW-23 due
4-8 (W)	Rec-23	Go over HW-23; work Ex. 33-5,6		
4-9 (Th)	Lect-24	Wave nature of light; Physical optics I: Interference	35 §1–8; 36 §1-5	HW-24 due
4-10 (F)	Rec-24	Quiz 10 ; go over HW-24		
Week 13				
4-14 (Tu)	Lect-25	Physical optics II: Diffraction; Polarization	36 §6; §8-10 33 §7; §10	HW-25 due
4-15 (W)	Rec-25	Go over HW-25		
4-16 (Th)	Lect-26	Particle nature of light; Wave nature of matter	38 §1–6; §8	HW-26 due
4-17 (F)	Rec-26	Quiz 11 ; Go over HW-26; work examples		
Week 14				
4-21 (Tu)	Lect-27	Bohr model of hydrogen atom; Schrödinger's equation	39 §1–3; §8 38 §7	HW-27 due
4-22 (W)	Rec-27	Go over HW-27		
4-23 (Th)	Lect-28	Wave functions of trapped electron	39 §4-6	HW-28 due
4-24 (F)	Rec-28	Quiz 12 ; Go over HW-28		

Exam III *FINAL EXAM will be scheduled by Registrar*

*Solutions to homework problems must be submitted using WileyPLUS (www.wileyplus.com). Classes are Lectures (Lect), Recitations (Rec), or Examinations (Exam). Reading should be completed before the associated class. **22** §4 means chapter 22, section 4 of text. Homework assignments HW-*n* are due at the beginning of class.