

Physics 2208: Syllabus and Reading Assignments for Spring 2017

Week	Lecture	Date	Topic	Reading Assignments	Lab	Sections
1	1	W Jan 25	Introduction to Phys2208, electric charge, Coulomb's law	general course information	No lab	
	2	F Jan 27	Electrostatic: electric charge, Coulomb's law, conductors and insulators	16-1 to 16-3		
2	3	M Jan 30	Electrostatic: electric field and field lines	16-4, 16-5		Co-op 1
	4	W Feb 1	Electrostatic: dipoles, distributed charges, charges & fields on electrostatic conductors	16-4, 16-5	No lab	
	5	F Feb 3	Electrostatic: charges follow field lines, Gauss' law	16-6, 16-7		HW1, W
3	6	M Feb 6	Electrostatic: electric potential energy, electric potential, equipotential surfaces	17-1, 17-2	Lab 1: Electrostatics	Co-op 2
	7	W Feb 8	Electrostatic: more in the electric potential; potential of group of point charges	17-3		Quiz 1
	8	F Feb 10	Electrostatic: capacitors, energy density of the electric field, capacitors in series and parallel, dielectrics	17-4 to 17-7		HW2, W
4	9	M Feb 13	Moving charges: current, current density, currents in metals, resistance, resistivity	18-1 to 18-3		Co-op 3
	10	W Feb 15	Moving charges: dissipated power, resistors in series and parallel, DC circuits, emf, Kirchhoff's rules	18-4 to 18-6	Lab 2: Ballistics with electrons	
	11	F Feb 17	Moving charges: exponential functions, RC circuits	18-7, 18-8		HW3, W
5		M Feb 20	(Break)			
	12	W Feb 22	Magnetism: magnetic field and force	19-1	No lab	Quiz 2
	13	F Feb 24	Magnetism: magnetic field lines, magnetic materials, charge moving in a magnetic field			HW4, Th
6	14	M Feb 27	Magnetism: crossed E and B fields; magnetic force on a current	19-2	Lab 3: Batteries, bulbs,...	Co-op 4
	15	W Mar 1	Magnetism: magnetic fields due to currents: Biot-Savart Law, magnetic force between current carrying wires	19-3, 19-5		Quiz 3
	16	F Mar 3	Magnetism: magnetic field due to currents: Ampere's law	19-4		HW5, W
7	17	M Mar 6	Magnetism: Induction: Faraday's law, Lenz's law	20-1, 20-2	No lab	Co-op 5
	18	W Mar 8	Magnetism: applications of Faraday's law, inductors and inductance	20-3, 20-4		Prelim 1, Mar 7
	19	F Mar 10	Magnetism: RL circuits, energy density of magnetic fields	20-6		HW6, Th
8	20	M Mar 13	AC circuits: AC current and power, transformer	21-1, 21-2	Lab 4a: Scope & func. generator	
	21	W Mar 15	AC circuits: (R)LC series circuits	21-3 to 21-6		Quiz 4
	22	F Mar 17	Maxwell's equations	22-2		HW7, W
9	23	M Mar 20	EM waves: fields, wave speed, spectrum...	22-1	Lab 4b: Capacitors	Co-op 7
	24	W Mar 22	EM waves: energy, Poynting vector, intensity, polarization	22-1, 23-4		Quiz 5
	25	F Mar 24	Geometrical optics: intro, Huygen's principle, reflection, refraction, Snell's law, total internal reflection	23-1, 23-2		HW8, W
10	26	M Mar 27	Geometrical optics: dispersion, Brewster's angle	23-3, 23-4	Lab 5: Magnetic induction	Co-op 8
	27	W Mar 29	Geometrical optics: images and mirrors	24-1 to 24-5		Quiz 6
	28	F Mar 31	Geometrical optics: lenses	24-6, 24-7		HW9, W
11	29	M Apr 10	Interference and diffraction: 2-source interference		No Lab	Co-op 9
	30	W Apr 12	Interference and diffraction: thin film interference	23-5		Prelim 2, Apr 13
	31	F Apr 14	Interference and diffraction: diffraction by single slit and circular aperture	23-6, 23-7		HW10, W
12	32	M Apr 17	Interference and diffraction: 2 slit and N slit interference, Bragg diffraction		Lab 6: Inductors & elec. Osc.	Co-op 10
	33	W Apr 19	Relativity: special relativity, time dilation	25-1 to 25-5		Quiz 7
	34	F Apr 21	Relativity: relativistic energy and momentum; general relativity	25-6, 25-7		HW11, W
13	35	M Apr 24	Quantum mechanics: photons, photoelectric effect	26-1, 26-2	Lab 7: Microwave optics	
	36	W Apr 26	Quantum mechanics: Compton scattering, X-ray production, atomic spectra, quantized atom	26-3, 26-5		Quiz 8
	37	F Apr 28	Quantum mechanics: lasers, particle waves	26-4		HW12, W
14	38	M May 1	Quantum mechanics: wave function, Schrodinger's equation, free particle, Heisenberg's uncertainty principle		Lab 8: Spectra	Co-op 11
	39	W May 3	Quantum mechanics: 1-D infinite square well, tunneling, atoms	26-6		Quiz 9
	40	F May 5	Nuclear physics: nucleus, radioactive decay	27-1, 27-5		HW13, W
15	41	M May 8	Nuclear physics: binding energy, fission, fusion	27-2 to 27-4	No Lab	
	42	W May 10	Particle physics	28-1 to 28-3		