

# Tentative Schedule for Introduction to Physics II

Physics 003, Spring 2018

	M	Tu	W	F
2/12	<u>ELECTRIC CHARGE AND FORCE</u> 22.1-22.3 the model, insulators and conductors	22.4 Coulomb's law: force and vector review	22.5 electric field concept	<u>ELECTRIC FIELD</u> 23.1-23.2 models, point charges, field lines
2/19	23.3 electric field of continuous charge distributions	continuous charge distributions, cont'd	23.4, 23.5 electric field of rings, disks, planes and spheres. parallel plate capacitor	23.6-23.7 motion of charged particles, dipoles in E
2/26	recap of E fields	<u>GAUSS'S LAW</u> 24.1-24.3 Symmetry, flux, calculating flux	24.3 24.4 calculating flux cont'd. Gauss's law	24.5 using Gauss's law
3/5	Review: electric charge, force, and electric field (ch 22, 23)	<i>Exam 1</i>	24.5 using Gauss's law cont'd	<u>ELECTRIC POTENTIAL</u> 25.1-25.2 gravitational analogy, potential energy of pt charges
3/12	25.4-25.5 electric potential, V in a parallel plate capacitor	25.7 electric potential of many charges	electric potential of many charges cont'd	26.2 <u>POTENTIAL AND FIELD</u> calculating E from V
3/19	<u>CONDUCTORS</u> 24.5 26.3. Gauss's law and potential	26.4-26.5 sources of electric potential, capacitance and capacitors	26.5-26.6 combination of capacitors, energy stored in capacitors	<u>CURRENT &amp; RESISTANCE</u> 27.1, 27.3, 27.4 carriers, current, current density, conductivity and resistivity
3/26	<i>Holiday</i>			
4/2	<i>Holiday</i>	27.5 resistance and Ohm's law	review: Gauss's law, electric potential, V&E, conductors (ch 24 25 26)	<i>Exam 2</i>
4/9	<u>CIRCUITS</u> 28.1-28.3 elements and diagrams, kirchoff's laws, energy and power	28.4-28.6 series and parallel resistors, real batteries	28.7-28.9 resistor circuits, rc circuits, grounding	<u>MAGNETIC FIELDS</u> 29.2-29.3 B source, cross product, B of moving charge
4/16	B from a current cont'd	29.1, 29.5, 29.6 magnetic dipoles, line integrals	25.6 Ampere's law, solenoids	29.7 magnetic force on a moving charge, applications
4/23	29.8-29.10. forces and torques from B, magnetism in matter	<u>ELECTROMAGNETIC INDUCTION</u> 30.1-30.3 induced currents, motional emf, magnetic flux	30.4 Lenz's law	30.5 Faraday's law
4/30	review: current and resistance, circuits, magnetic fields (ch 27 28 29)	<i>Exam 3</i>	30.7 30.8 induced currents apps, inductors	<u>EM FIELDS AND WAVES</u> 31.2-31.4 field laws thus far, displacement current, Maxwell's eqns (possibly 31.1 E or B?)
5/7	31.6-31.7 properties of EM waves, polarization	<u>WAVE OPTICS</u> 33.1-33.3 models of light, interference, double slit interference, diffraction grating	33.4 33.6 single slit diffraction, circular aperture diffraction	<u>RAY OPTICS</u> 34.1-34.3 ray model, reflection, refraction
5/14	34.3 34.4 total internal reflection, thin lenses ray tracing	34.5 thin lenses refraction theory	<u>OPTICAL INSTRUMENTS</u> 35.1 35.2 lenses in combination, the camera	review: EM induction, wave optics, ray optics, optical instruments (ch 30 31 33 34)
FINALS	<i>Final Exam on Tuesday 10:30-12:30</i>			