TABLE 2
PHYSICS 102 SYLLABUS FOR THE SPRING TERM, 2014-15

Approx Hrs +-.5	Chapter	Topics Covered (Text: College Physics, Serway and Vuille 10th edition)	Sections or pages of Text Omitted 10th ed
3	13	**VIBRATIONS & WAVES.** Hooke's Law, simple harmonic motion, elastic potential energy, reference circle, simple pendulum, transverse & longitudinal waves, superposition, interference, and reflection of waves.	13.6
2	14	**SOUND.** Characteristics of sound waves, Doppler effect (qualitative), standing waves, resonance, open and closed tubes, beats.	14.3-14.5 14.12,14.13
.5	21	**ELECTROMAGNETIC WAVES.** The Electromagnetic spectrum (only §21.12)	21.1-21.11, 21.13
2	22	**REFLECTION AND REFRACTION OF LIGHT.** Reflection, refraction, dispersion and prisms, total internal reflection.	22.6
3.5	23	**MIRRORS AND LENSES.** Plane mirrors, images formed by spherical mirrors (convex and concave), thin lenses. (Note: 6th ed table 23.1 has second line reversed)	23.4, 23.7
.5	25	**OPTICAL INSTRUMENTS.** Camera, eye (omit defects), power of a lens, simple magnifier, compound microscope, telescope. Qualatative	25.6-25.7
4	15	**ELECTRIC FORCES AND ELECTRIC FIELDS**. Properties of electric charges, insulators, conductors, Coulomb's law, electric field, field lines.	15.9
2	16	**ELECTRICAL ENERGY AND CAPACITANCE**. Potential difference, electric potential, electron volt, potential energy, capacitance, series/parallel combinations of capacitors.	16.4,16.5 16.9-16.10
3	17	**CURRENT AND RESISTANCE.** Electric current, Ohm's law, resistance, resistivity, temperature variation of resistance, electrical energy and power, energy conversion.	17.8
3	18	**DIRECT ELECTRIC CURRENTS**. Sources of emf, resistances in series and parallel, simple circuits, measurement of resistance using voltmeter and ammeter, internal resistance of battery cells in series.	18.4,18.5 18.8
5	19	**MAGNETISM**. Magnetic fields, magnetic force on a current-carrying conductor, torque, galvanometer as an ammeter or voltmeter, motion of a charged particle in a magnetic field, magnetic field of a long straight wire, or between two parallel conductors, or of a current loop, solenoid	19.10 note: need to know about galvanometers See class notes
1	20	**INDUCED VOLTAGES AND INDUCTANCES.** Induced emf, magnetic flux, Faraday's law of induction, Lenz's law, motional emf, generators & motors (qualitative).	20.4-20.7
2	27	**QUANTUM PHYSICS**. Photoelectric effect	See left description
2.5	28	**ATOMIC PHYSICS**. Bohr's theory of the atom	See left description