TABLE 1

PHYSICS 102 SYLLABUS FOR THE FALL TERM, 2013-2014

Approx.. hours +-.5 hrs	Chapter	Topics Covered (Text: College Physics, R. A. Serway 7th, 8th or 9th edition)	Sections or Pages of Text Omitted 8th ed.	9th .
1	1	**INTRODUCTION**. Standards of length, time and mass, dimensions of physical quantities, significant figures, cooordinate systems.	-	-
4	2	**MOTION IN ONE DIMENSION**. Displacement, velocity, acceleration, motion with constant acceleration, free fall.	-	-
4	3	**VECTORS AND TWO-DIMENSIONAL MOTION**. Vectors and scalars, properties/components of a vector, projectile motion.	3.5	3.5
4	4	**THE LAWS OF MOTION**. Force, Newton's laws of motion, mass and weight, applications of Newton's laws, friction.	-	-
3.5	5	**WORK AND ENERGY**. Work, kinetic and potential energy, conservative and non-conservative forces, work-energy theorem, conservation of energy, power.	-	-
3	6	**MOMENTUM AND COLLISIONS**. Linear momentum and impulse, conservation of momentum, elastic (definition only) and inelastic collisions, glancing collisions.	6.5 173	6.5 179-180
3.5	7	**CIRCULAR MOTION AND THE LAW OF GRAVITY**. Angular velocity, centripetal acceleration and force, Newton's law of gravitation. (Omit rotational motion under constant angular acceleration, consequences of Newton' law, Kepler's Laws)	7.2 211-215	7.2 217-221
3	8	**ROTATIONAL EQUILIBRIUM AND ROTATIONAL DYNAMICS.** Torque and the second condition of equilibrium, center of gravity, examples of objects in equilibrium. (Omit Newton's laws for rotation, rotational kinetic energy, angular momentum.)	8.5-8.7	8.5-8.7
3	9	**SOLIDS AND FLUIDS**. States of matter, elastic properties of solids, density and pressure, variation of pressure with depth, buoyant force and Archimedes' principle, fluids in motion, surface tension, capillarity (last 2 topics on pages 1021-26 in the 4th edition).	304-306 9.10	312-315 9.10
1	10	**THERMAL PHYSICS**. Thermometer and temperature scales, expansion of solids and liquids. (omit zeroth law, ideal gas, kinetic theory of gases.)	10.1 10.4- 10.5	10.1 10.4- 10.5
3	11	**HEAT**. Mechanical equivalent of heat, specific heat, calorimetry, latent heat, conduction, convection, and radiation (qualitative only). (Omit hindering heat transfer and applications.)	11.6	11.6