

TABLE 1
PHYSICS 102a SYLLABUS FOR THE FALL TERM, 2026

Approx.. hours +-.5 hrs	Chapter	Topics Covered (Text: College Physics, Open Stax)	Sections or Pages Text Omitted
1	1	INTRODUCTION. Standards of length, time and mass, dimensions of physical quantities, significant figures, coordinate systems.	-
4	2	KINEMATICS. Displacement, velocity, acceleration, motion with constant acceleration, free fall.	-
4	3	TWO-DIMENSIONAL KINIMATICS. Vectors and scalars, properties/components of a vector , projectile motion.	3.5
4	4(5.1)	DYNAMICS: FORCE AND NEWTON'S LAWS OF MOTION. Force, Newton's laws of motion, mass and weight, applications of Newton's laws, friction(CH 5.1).	-
3.5	7	WORK, ENERGY, AND ENERGY RESOURCES. Work, kinetic and potential energy, conservative and non-conservative forces, work-energy theorem, conservation of energy, power.	7.8 and 7.9
3	8	LINEAR MOMENTUM AND COLLISIONS. Linear momentum and impulse, conservation of momentum, elastic ((8.4) momentum only) and inelastic collisions, glancing collisions.	8.7 and (elastic collision equations)
3.5	6	UNIFORM CIRULAR MOTION AND GRAVITATION Angular velocity, centripetal acceleration and force, Newton's law of gravitation.	6.4
3	9	ROTATIONAL EQUILIBRIUM AND DYNAMICS. Torque and the second condition of equilibrium, center of gravity, examples of objects in equilibrium.(notes will cover center of mass calculation)	9.5 and 9.6
3	11	FLUIDS STATICS. States of matter, elastic properties of solids(Chapter 5.3), density and pressure, variation of pressure with depth, buoyant force and Archimedes' principle, fluids in motion(qualitative), surface tension. Just what was covered in class.	11.8(keep surface tension,11.9
1	13	TEMPERATURE, KINETIC THEORY AND GAS LAW. Thermometer and temperature scales, expansion of solids and liquids. (omit zeroth law, ideal gas, kinetic theory of gases.)	13.3,13.4,13.5
3	14	HEAT. Mechanical equivalent of heat, specific heat, calorimetry, latent heat, conduction, convection, and radiation (qualitative only). Global warming, qualitative	14.5,14.6 (qualitative) 14.7