

PHYSICS 102, GENERAL PHYSICS

Sections A01, A02 and A03
2014- 2015

INSTRUCTORS;

Alex van Netten Section A01
Jonathon Rudge Section A02
Paul Lim Section A03

TEXT: Hybrid version College Physics by R.A. Serway & Vuille 10th Edition bundled with Enhanced Webassign software

MARKING SCHEME:

End of term exam 50%

Midterm 20%

Assignments 10%

Lab 20%

Fall term and spring term are equally weighted for final grade calculation.

Conversion of numerical grades to letter grades is approximately by the standard University scale. (Some scaling could occur if necessary.)

There are weekly assignments, midterms and common end-of-term multiple choice exams. The assignments are online assignments using the Enhanced WEBASSIGN software. Everyone must register with WEBASSIGN using the different codes for each section.(A01 4166 1036, A02 9612 3836, and A03 0583 7403 all use the institution code uvic.bc) The other course info can be found on the Physics 102 Course spaces website.

Students must register in a Physics 102 lab section. Students should do all five labs in each term and are required to obtain a passing mark in the lab in order to pass the course. If a student cannot complete the lab on the assigned day due to unavoidable circumstances, the student should make arrangements with the lab instructor to complete the lab at some other time before the start of the next lab. There is no lab exam at the end of the course.

Students are reminded that they should have passed Math 12 and Physics 11 and should normally have taken or be taking Math 102 or 100/101 as a co-requisite. They are advised to take Math 100/101 if they are planning to take further courses in Physics.

A student may obtain, at most, 4.5 units of credit from 100 level Physics courses.

Grades may be posted using student identification numbers but not names. If any student wishes to opt out of this practice they should notify their instructor.

On all examinations the only acceptable calculator is the Sharp EL-510R. This calculator can be bought in the Bookstore for about \$10. DO NOT bring any other calculator to examinations

PHYSICS 102 SYLLABUS FOR THE FALL TERM, 2014-2015

Approx. hours (+/- .5 hrs)	Chapter	Topics Covered (Text: College Physics, Serway and Vuille 10th edition)	Sections or pages of text omitted (10 th Ed.)
1	1	INTRODUCTION. Standards of length, time and mass, dimensions of physical quantities, significant figures, coordinate 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
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, page 183 (elastic collision equations)
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's law, Kepler's Laws)	7.2 222-225 (gravitational potential energy revisited)
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
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(qualitative), surface tension, capillarity	318-321(viscous fluid flow) 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
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