

PHYSICS 102b, GENERAL PHYSICS
Sections A01, A02(online lectures), A03
2025

Course Coordinator and instructor: Alex van Netten email: vannette@uvic.ca

1. **TEXT:** Openstax free text book College Physics. See student resources in link below, <https://openstax.org/details/books/college-physics?Student%20resources>

2. **MARKING SCHEME:**

Midterm	20%	Mar 4 or Mar 5 online 7:00 pm to 8:30 pm
Labs	20%	in person at your lab scheduled time
Assignments	10%	available through Brightspace
Final	50%	During the exam period and in person

(Some scaling could occur if necessary.)

3. There are weekly assignments using Brightspace and can be accessed by clicking course tools and selecting the quizzes section on Brightspace(not assignment section). A series of video lectures will be posted each week for the online lecture section, these will also be available for the in person lectures.
4. All students must register in a Physics 102b 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 contact the lab instructor ASAP. All labs will be held at the scheduled time and in person. The lab schedule for all sections is given in Brightspace.
5. Students are reminded that they should have passed Math 12 and Physics 11, physics 102a(or equivalent) 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.
6. A student may obtain, at most, 4.5 units of credit from 100 level Physics courses.
7. Grades may be posted using student identification numbers but not names. If any student wishes to opt out of this practice they should notify the instructor.
8. The midterm will be online and students must do the exam alone. The only acceptable calculator is the Sharp EL-510R(or equivalent at the bookstore) which can be bought at the Bookstore for about \$10. The final exam will be in person during the exam period.

TABLE 2
PHYSICS 102B SYLLABUS FOR THE SPRING TERM, 2025

Approx Hrs +-.5	Chapter	Approximate topics Covered (Text: College Physics OpenStax)	Sections or pages of Text Omitted Approximate
3	16	VIBRATIONS & WAVES. Hooke's Law, simple harmonic motion, elastic potential energy, reference circle, simple pendulum, transverse & longitudinal waves, superposition, interference, and reflection of waves.	16.7 16.8 16.11
2	17	SOUND. Characteristics of sound waves, Doppler effect (qualitative), standing waves, resonance, open and closed tubes, beats.	17.3 17.6 17.7
.5	27.1	ELECTROMAGNETIC WAVES. The Electromagnetic spectrum (only 24.3)	
2	25.1,25.2, 25.3,25.4 25.5	REFLECTION AND REFRACTION OF LIGHT. Reflection, refraction, dispersion and prisms, total internal reflection.	
3.5	25.6,25,7	MIRRORS AND LENSES. Plane mirrors, images formed by spherical mirrors (convex and concave), thin lenses	
.5	26	OPTICAL INSTRUMENTS. Camera, eye, power of a lens, simple magnifier, compound microscope, telescope. Qualitative	
4	18	ELECTRIC FORCES AND ELECTRIC FIELDS. Properties of electric charges, insulators, conductors, Coulomb's law, electric field, field lines.	18.6,18.8
2	19	ELECTRICAL ENERGY AND CAPACITANCE. Potential difference, electric potential, electron volt, potential energy, capacitance, series/parallel combinations of capacitors. Omit eqn 19.53	19.4,19.7
3	20	CURRENT AND RESISTANCE. Electric current, Ohm's law, resistance, resistivity, temperature variation of resistance, electrical energy and power, energy conversion.	20.5,20.6,20.7
3	21	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, terminal voltage.	21.3,21.5,21.6
5	22	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	22.6,22.9 note: need to know about galvanometers See class notes
1	23.3	INDUCED VOLTAGES AND INDUCTANCES. Induced emf, magnetic flux, motional emf, generators & motors (qualitative).	
2	29	QUANTUM PHYSICS. Photoelectric effect, Quantization of energy	29.4,29.5,29.6,29.7,29.8
2.5	30	ATOMIC PHYSICS. Bohr's theory of the atom	30.5-30.9