SYLLABUS FOR CONCEPTS OF GENERAL PHYSICS (PHYS 2B(50207))

Spring 2020	**Instructor Name:** Harinder Singh Bawa
Office Hours: N/A (E-mail me)	**Class Schedule:** Mondays: 5:00pm-6:50pm Wednesdays: 5:00pm-6:50pm && 7:00pm-8:50pm
Location: PHYS70	E-Mail: **harinder.singh.bawa@gmail.com**

Goal

Physics 2B is an algebra-based introductory physics course consisting of topics: electricity and magnetism, optics, and modern physics. You are expected to know the material of Physics 2A and will need a scientific calculator.

Prerequisites

Phys 2A, or permission to register from the Department of Physics.

Required Textbooks and Materials

There is no specific book we follow; Lectures would be combination of

OpenStax, University Physics Volume 2 and Volume 3 (ISBN-10: 1-947172-21-2, ISBN-10: 1-947172-22-0) (Available on canvas to download)
 Chapters 15-29 in College Physics by Serway and Vuille (electricity and magnetism, optics, and modern physics)

ATTENDANCE: Students are expected to attend all class meetings, be on time, and be in class the <u>entire</u> class session. Calling me to tell me you will be absent **does not** excuse you. **STUDENTS LEAVING CLASS BEFORE THE END OF CLASS without notifying me WILL BE COUNTED AS BEING ABSENT! Six (6) absences total or three (3) absences in the first three weeks of class** may result in a drop from the course. However, if you decide to drop the course, it is **your** responsibility to make the drop official in the Administrations and Records office or else possibly receive a grade of **F.**

Behavioral Standards: Your classmates and I would greatly appreciate that students in the class take care of any personal needs (i.e., using the restroom, getting a drink, sharpening a pencil) before class begins. Please turn your phone off when entering the class. You may not use your phone as a calculator. Calculators are provided in class if you don't have one.

TARDIES: Students are expected to be on time. It is distracting, rude and unfair to fellow classmates and to the instructor when a student is late. It is your responsibility to notify the instructor (on a break or after class) that you are present if you arrive after roll has been taken giving valid reason of being late. You would be flagged tardy and if you accommodate three tardies, you would be deducted 5% of the grades.

HOMEWORK: All homework assignments must be turned in to me in-class/Canvas (Wherever specified) on the specified due date. Homework problems will be assigned out of lecture a well as specific worksheets given and your solutions should be **neatly** written on paper. If you are proficient in using the equation editor on Microsoft Word, LaTeX, or other document software, you may type your solutions.

Please use scratch paper to work on the problems but only turn in the solutions to me. Turning in a homework set **without showing work** is not worth any credit! You do not need to re-write the entire problem, but write out the given variables, draw pictures/figures, and list what you're finding to help your thought process. Collaboration on homework sets is fine, but you must turn in your own solutions. Homework will be worth **15%** of your grade and I will drop your lowest homework score.

LAB REPORTS: This class has a laboratory section that is mandatory. I will provide all lab reports for you and they will be due at the end of the lab session on the same day assigned (unless extra time is necessary.) Lab reports will be worth **15%** of your grade. Some lab sessions will be solely dedicated to in-class problem solving. There will not be any opportunities to make up a lab, so I will drop your lowest lab grade.

INCLASS QUIZ: Randomly in class, we would be having in-class quizzes from the topics we covered previously. You may or may not be notified about those quizzes. These quizzes are worth **10%** of your grade.

MidTerm EXAMS: There will be 3 mandatory midterm exams during the semester. There are no makeup exams for missed tests. NO EXCEPTIONS! You may use a 3" x 5" note card (both sides) for your own formula sheet on midterm exams and the final (you may write ANYTHING on here, formulas, practice problems, whatever helps you the most!) Exams will mostly be multiple choice problems and may require 1-3 free response questions. Only scientific calculators may be used. The exams should only take 90 minutes to complete but I will give you 1 hours and 50 minutes. The midterm exams are worth **45%** (equally weighted, **15%** each) of your grade.

FINAL EXAM: The final exam should only take 90 minutes to complete but I will give you 2 hours and 50 minutes. This exam will be comprehensive, but most of the material will be from the final unit of the class. The final will be worth **15%** of your grade. The final exam can be used to replace your lowest midterm score (except for a "0" due to an absence.)
 **Date of Final exam is mentioned on Reedley College Website.

Example Student: Example student has the following grades:
> ➢ Homework: 75%
> ➢ Midterm Average: 85%
> ➢ In Class Quizzes: 100%
> ➢ Lab Reports: 95%
> ➢ Final Exam: 80%

Their grade is calculated as follows: (Canvas will do this automatically, including drops)

$(.15)(75) + (.45)(85) + (.1)(100) + (.15)(95) + (.15)(80) = 85.75\%$

	Percent of Total Points	Grade
	89-100	A
	78-88.99	B
	65-77.99	C
	55-64.99	D
	0-54.99	F

WHERE TO FIND YOUR GRADE:
I will put your grades on Canvas. You can also calculate it yourself at any time using the method above.

SPECIAL NEEDS REQUESTS: If you have a verified need for an academic accommodation or materials in alternate media (i.e., Braille, large print, electronic text, etc.) per the Americans with Disabilities Act (ADA) or Section 504 of the Rehabilitation Act, please contact me as soon as possible.

Course Plan

#Week	Topics
3	Mathematical Intro, Electric charge, Coulomb law, Electric field
	Electric fields, Electrostatic Equilibrium
	Electric potential, Conductors
	Electric Work, Energy, Equipotentials, Capacitors
4	Current, Resistivity, Ohm's law, Electrical energy and power, circuits
	Current and resistance, Capacitance and capacitors, dielectrics
	Circuits: direct current, resistors and emf, loop laws
	RC circuits (qualitative)
3	Magnetic fields: magnetic force on a charged particle and current, magnetic torque on a current loop
	Magnetic fields: Bio-Savard and Ampere laws and applications
	Induction: Faraday's law, Lenz's law
	Inductance and self induction
3	Reflection & Refraction, Dispersion
	Plane mirror, Curved mirrors, Thin lens equation
	Lens Aberration, Magnification, Physical Optics, Interference
	Slit Diffraction, Polarization
4	Special Relativity, Einstein Postulates
	Relativistic Momentum and Velocity
	Wave Particle Duality, Wave and Particle nature of light, Photo-electric effect
	Emission Spectrum, Bohrs Model of Hydrogen atom
	Nuclear Structure of atom, Radioactive Decay, Nuclear Decay

Academic Dishonesty

Students at Reedley College are entitled to the best education that the college can make available to them, and they, their instructors, and their fellow students share the responsibility to ensure that this education is honestly attained. Because cheating, plagiarism, and collusion in dishonest activities erode the integrity of the college, each student is expected to exert an entirely honest effort in all academic endeavors. Academic dishonesty in any form is a very serious offense and will incur serious consequences.

Cheating is the act or attempted act of taking an examination or performing an assigned, evaluated task in a fraudulent or deceptive manner, such as having improper access to answers, to gain an unearned academic advantage. Cheating may include, but is not limited to, copying from another's work, supplying one's work to another, giving or receiving copies of examinations without an instructor's permission, using or is playing notes or devices inappropriate to the conditions of the examination, allowing someone other than the officially enrolled student to represent the student, or failing to disclose research results completely.

Plagiarism is a specific form of cheating: the use of another's words or ideas without identifying them as such or giving credit to the source. Plagiarism may include, but is not limited to, failing to provide complete citations and references for all work that draws on the ideas, words, or work of others, failing to identify the contributors to work done in collaboration, submitting duplicate work to be evaluated in different courses without the knowledge and consent of the instructors involved, or failing to observe computer security systems and software copyrights.

Incidents of cheating and plagiarism may result in any of a variety of sanctions and penalties, which may range from a failing grade on a particular examination, paper, project, or assignment in question to a failing grade in the course, at the discretion of the instructor and depending on the severity and frequency of the incidents.

Class Cancellation Notification

If I must cancel class for reasons beyond my control, I will inform the Dean's office as soon as possible and there will be an official notification posted on the door. You can also check on the Reedley College website where the administration updates what classes are cancelled. Finally, Canvas will be used to inform you of a class cancellation, which you can check online or on your cell phone if you download the app for your mobile phone. Please note that it is unlikely that I will be cancelling any classes, we have too much to do! If it has been a few minutes and I have not shown up, please do not leave as if I am running late I will inform the prior instructor and they will let you know where I am and how long I will be. Please note again that I will probably not be late either, but this is just in case!