UNIVERSITY OF CAPE TOWN: DEPARTMENT OF PHYSICS

PHY1032F: GENERAL PHYSICS B (2020)

Description: PHY1032F is an algebra-based introductory course for Science students who do not intend proceeding to second-year courses in Physics. Some calculus may be used.

As a consequence of UCT's emergency response to the COVID-19 pandemic, all lectures, laboratories and tutorials will take place in an online (distance learning) mode for the second quarter (Q2). For the reminder of the course, all assessments will be of a "continuous" nature. There will be no final examination in June. All assessments will be graded both for DP purposes and for you to receive feedback on your progress and performance. Students who have met the DP requirements and who achieve an aggregate of 50% or greater will be given a final grade code of "Pass". There will be no final grade beyond the codes "Pass" or "Fail". This is in accordance with the overarching decision made by UCT for F courses in 2020. Detailed DP requirements can be found further in the document.

Lecturers:

Electromagnetism:	Prof David Wolfe	dwolfe@unm.edu / RW James 4.T6
Optics & Thermal Physics:	Dr Trisha Salagaram (**convenor**)	trisha.salagaram@uct.ac.za / RW James 5.13
Modern Physics:	Prof Mark Blumenthal	mark.blumenthal@uct.ac.za / RW James 5.03

Course Tutor: Mr Blessed Ngwenya / ngwble001@myuct.ac.za / RW James 3.26

Online tutoring using Vula Chat rooms:
Prof Wolfe will on available to answer questions daily from 10:00 until 12:00 on weekdays.
Blessed will answer question in the Vula chat room between 12:00 and 14:00 on weekdays.
Please post any questions you have in the chat room for them to help you.

Prerequisite: PHY1023H or PHY1031F passed

Prescribed Textbook: General Physics B: College Physics for PHY1032F at UCT. A copy of the textbook is available on the course Vula page under Resources/Textbook or online at `https://legacy.cnx.org/content/col12128/1.2`

Course outline:
Electromagnetism: Electric Charge, Electric Field, Gauss's Law, Electric Potential, Capacitance, Current, Current Density, EMF, Resistance, Resistivity, Networks, Magnetic Field, Biot-Savart Law, Ampere's Law, EMI, Inductance, Alternating Current, Electromagnetic Waves. Completed before lockdown
Optics: Geometrical Optics, Polarisation, Interference, Diffraction
Thermal Physics: Temperature, Heat, Kinetic Theory of Gases, 1st and 2nd Laws of Thermodynamics
Modern Physics: Special Relativity, Quantum Physics, Elementary Nuclear Physics, Atomic physics, Radioactivity
Modern physics, optics and thermal physics will be taught online. We will focus on the topics in blue text will be taught.

Lectures: For Term 2, all lectures will be online, through Vula, making use of voice-over-slides and other supplementary materials. *See the lecture timetable on the next page.*

Laboratories: For Term 2, the laboratory component of the course will be in a "do-at-home" format. There is a separate document dealing with the lab course.

Tutorials: For Term 2, all whiteboard tutorials are suspended.
Prof Wolfe will on available to answer questions daily from 10:00 until 12:00 on weekdays.
Blessed will answer question in the Vula chat room between 12:00 and 14:00 on weekdays.
Please post any questions you have in the chat room for them to help you.

Homework: For Term 2, all weekly problem sets will not be handed in. Instead problems will be presented as a Vula assignment with numeric response and other types of questions. You will recieve feedback after you complete and submit the assignment.

Assessment:
COVID-19 plan is for Continuous Assessment: Class record (weekly problem sets, class tests and laboratory record and lab test) counts 100%.

Note that in term 2 there would have been 1 class test and one June examination. There will be no June exam. There will now be 2 class tests given in a "do at home" format. Details will follow. The lab test will also be in a "do-at-home" format. Please read the Faculty of Science Code of Honour document that is on Vula in regards to taking tests at home.

Duly Performed (DP) requirements: A grade of 50% for the class record is required for a pass. Further DP requirements are: at least 50% for the laboratory record; and participation in all class tests.

UCT Department of Physics: PHY1032F 2020 Online teaching topics for term 2

Week	Date	Weekly outline	Lab activity
17	20-24 April	Orientation for online teaching	none
18	28-30 April	Modern physics: special relativity	TBA
19	4-8 May	Modern physics: special relativity	
20	11-15 May	Modern physics: quantum physics	
21	18-22 May	Modern physics: quantum physics. CLASS TEST 2	TBA
22	25-29 May	Optics: wave optics	
23	1-5 June	Optics: wave optics	
24	8-12 June	Thermal physics: temperature and heat	TBA
25	15-19 June	Thermal physics: kinetic theory of gases	
26	22-26 June	Thermal physics: 1^{st} and 2^{nd} laws of thermodynamics	
27	29 June - 3 July	CLASS TEST 3	
28	6-10 July		LAB TEST