Physics 214: General Physics II 2nd Summer 2023

Course Description: This course is the second part of a two-semester algebra-based treatment of introductory physics. Topics include electricity, magnetism, electromagnetic waves and optics. Of the courses Phys 108, Phys 212, and Phys 214, only one can be counted toward a degree.

Course Objectives:

- Develop conceptual reasoning and physical understanding.
- Improve numerical problem-solving skills.
- Solve problems in electrostatics, circuits, magnetism, EM waves, optics, and radioactivity.

Prerequisite: Phys 213: General Physics I		Corequisite: Phys 224: Laboratory Physics II				
Class Meeting Time: every week day 10:00 am – 11:50 am in Lewis 101						
Testing:	(see schedule on back page)					
Instructor: Office: E-mail:	Sina Rostami Lewis 104 (for answering qu srostami@olemiss.edu	estions and office hours)				
Office Hours:	every day 3-4 pm					
Optional Textbook:	College Physics, 11th edition	by Serway and Vuille.				

Required Materials: Scientific or graphing calculator (not on phone) such as TI-36X Pro.

Grading:

Homeworks and pre-class activity	20 %
Exam 1	25 %
Exam 2	25 %
Final Exam	30 %

Grading scale:	А	(percentage $\geq 92\%$)
	A -	$(90\% \le \text{percentage} < 92\%)$
	B +	$(87\% \le \text{percentage} < 90\%)$
	В	$(82\% \le \text{percentage} < 87\%)$
	В -	$(80\% \le \text{percentage} < 82\%)$
	C +	$(77\% \le \text{percentage} < 80\%)$
	С	$(70\% \le \text{percentage} < 77\%)$
	D	$(60\% \le \text{percentage} < 70\%)$
	F	(percentage <60%)

Pre-class Activity:

Before each class, you will complete the pre-class activity (unless told otherwise) and turn it in during class. (due at 10:00 am the day of class.) It is very important that you do this work to have a better comprehension of the lecture taught in class.

Homework:

At the start of each class, the homework from the previous lecture should be completed and turned in by 10:00 am. Please note all homework are weighted equally

Exams:

Two midterm exams and a **mandatory comprehensive final**, as shown on the schedule on the last page. The dates of the exams and final will not change unless class is canceled for unforeseen reasons (weather, emergency, etc.). The exams will be held on regular lecture hours and the lecture will be held at lab time during exam dates. The chapters covered on each exam may change, if needed. No make-up exams will be given unless arrangements are made in advance or in case of unforeseeable emergencies.

Attendance:

Consistent lecture attendance is important for your learning and your grade. Please scan your ID at the scanners in the classroom when you enter every class you attend. You will be able to make up any work you miss due to isolating, quarantining, or getting tested for COVID. Please do not come to class if you are feeling ill!

Academic Honesty:

You may work with other students on the homework, but you cannot copy their work. Make sure that all work submitted is your own, so that you would be able to fully explain it to me or redo a similar problem if asked. Uploading the materials from this class to Chegg, Coursehero, or other cheating websites or using any solutions that are posted there would violate the UM Standards of Honesty. Consequences for academic dishonesty depend on the seriousness of the offense and will be at least a zero on the assignment or exam and may include an overall grade of F.

Student Support Services:

The University Counseling Center is a professional facility offered by the University of Mississippi to assist students, faculty, and staff with many types of life stressors that interrupt day-to-day functioning, including the stressors associated with the COVID-19 pandemic. They offer individual counseling, couple's counseling, group counseling, stress management, crisis intervention, assessments and referrals, outreach programs, consultations, and substance abuse services. There is no fee for currently enrolled University students and everything you say to your counselor is confidential. You can contact the Counseling Center for information about mental health issues at https://counseling.olemiss.edu, counslg@olemiss.edu, 662-915-3784, and 320 Lester Hall. You can schedule an appointment or get information about appointments by calling the UCC at 662-915-3784.

University-wide Policies:

Attendance

The university requires that all students have a verified attendance at least once during the first two classes of the semester for each course. If your attendance is not verified, you will be dropped from the course and any financial aid will be adjusted accordingly. Please see <u>http://olemiss.edu/gotoclass</u> for more information.

Academic integrity and honesty

Students are expected to adhere to the University of Mississippi Creed and the Standards of Honesty as described in Policy Code ACA.AR.600.001 and the <u>M Book</u>. Students are reminded that cheating in any form will not be tolerated. Performance on all tests and assignments shall represent the individual work of the student. Those who violate the Standards of Honesty will be reported and subject to the appropriate sanction, which may include expulsion from the University.

Intellectual property

All materials distributed electronically and in hard copy in this class are protected under intellectual copyright. Any attempt to upload these documents to a file sharing service or to profit from their distribution by any means constitutes theft and will be in violation of intellectual property law and the UM Academic Conduct Code unless expressly permitted for by the instructor.

Nondiscrimination policy

The University complies with all applicable laws regarding affirmative action and equal opportunity in all its activities and programs and does not discriminate against anyone protected by law because of age, color, disability, national origin, race, religion, sex, sexual orientation, handicap, or status as a veteran or disabled veteran.

Disability Access and Inclusion

The University of Mississippi is committed to the creation of inclusive learning environments for all students. If there are aspects of the instruction or design of this course that result in barriers to your full inclusion and participation, or to accurate assessment of your achievement, please contact the course instructor as soon as possible. Barriers may include, but are not necessarily limited to, timed exams and in-class assignments, difficulty with the acquisition of lecture content, inaccessible web content, and the use of non-captioned or non-transcribed video and audio files. If you are approved through SDS, you must log in to your Rebel Access portal to request approved accommodations. If you are not yet approved through SDS, you must contact Student Disability Services (at 662-915-7128 or sds@olemiss.edu) so the office can (i) determine your eligibility for accommodations, (ii) disseminate to your instructors a Faculty Notification Letter, (iii) facilitate the removal of barriers, and (iv) ensure you have equal access to the same opportunities for success that are available to all students.

Examinations and last week of class

Regulations governing all examinations — A student's failure to appear for an examination without an acceptable excuse, inability to present valid identification, absence from the room during the course of an examination without the consent of the examiner, or attempting any portion of an examination without submitting his or her answers shall result in failure of the examination. Tardiness beyond 15 minutes forfeits a student's right to an examination.

Final examinations — A final examination, to be given at the time posted in the examination schedule, is required in each undergraduate course, unless the appropriate chair and dean have approved an exception. A student who has three or four final examinations in one day may arrange with the course instructor to take the noon or 7:30 p.m. examination at another time. In order to give a final examination

at any time other than that shown in the posted examination schedule, an instructor must have prior approval of the department chair and dean.

Last week of class — The following guidelines exist to allow sufficient time for students and instructors to prepare for final examinations. These guidelines apply to the week preceding final examinations for undergraduate courses held during Fall and Spring semesters.

- During the period of Wednesday through Friday of the last week of class, instructors are not to give exams, tests, or quizzes that contribute more than 10% of the final grade for a class. An instructor can obtain approval of the department chair and dean to give an exam, test, or quiz, of this weight, during this three day period. Instructors should return graded work and/or inform students of their grades on exams, tests, or quizzes prior to the beginning of finals week.
- Exceptions to the above statement are automatically made for lab-based courses, technical writing courses, seminar courses that assign a term paper, and senior design courses that assign a multi-faceted project in lieu of a final exam. Major projects of the above types, which contribute more than 10% of the final grade and which are due during this Last Week period, should be assigned in the syllabus at the beginning of the semester and any substantial change in the assignment should be made known to students before the drop deadline.

Date	Topics covered	Chapter	Midterm/Final
			Exam
29 th of June	Electric Charge, Columbus law, Electric	15.1-15.6	
	Field and Electric Field lines, Conduc-		
	tors, Millikan Oil Drop		
30 th of June	Electric Flux and Gauss' Law, Electric	15.8,16.1-16.3	
	Potential, Potential Energy of Point		
	Charges, Charged Conductors, and		
	Equipotential Surfaces		
3 rd of July	Capacitors, Combinations of Capacitors,	16.5-16.8	
	Energy in a Capacitor, Capacitors with		
	Dielectrics		
4 th of July	No Class	No Class	No Class
5 th of July	Electric Current, Current and Voltage	17.1-17.8	
	Measurements, Resistance, Electrical		
	Energy and Power,		
6 th of July	Emf, Resistors in Series & Parallel,	18.1-18.3	
7 th of July	Kirchhoff's Rules , RC Circuits,	18.4-18.8	
10 th of July	Exam at Lecture time/ lecture during	19.1-19.5	Midterm Exam I,
,	lab time: Magnets, Magnetic Fields,		Chapter 15-18
	Magnetic Force		(during lecture
			hours)
11 th of July	Magnetic Torque, Ampère's Law,	19.6-19.10	
12 th of July	Induced emf and Magnetic Flux, Self-In-	Chapter 20 (entire	
,	ductance. Energy Stored in Magnetic	chapter)	
	Fields	,	
13 th of July	Alternating-Current Circuits and	Chapter 21 (entire	
,	Electromagnetic Waves	chapter)	
14 th of July	reflection and refraction of Light	Chapter 22 (entire	
,		chapter)	
17 th of July	Exam at Lecture time/ lecture during	23.1 - 23.4	Midterm Exam II
,	lab time: Mirrors and Lenses		Chapter 19-22
			(during lecture
			hours)
18 th of July	Thin, Lenses, The Eve	23.5 - 23.6, 25.2	
19 th of July	Young's Double-Slit Experiment.	24.1 - 24.4.	
,	Change of Phase. Diffraction	,	
20th of July	Diffraction.	24.5 - 24.8	
21 st of July	Polarization. Photoelectric Effect	24.9.27.1 – 27.2	
24 th of July	X-Rays, The Dual Nature of Light and	27.3, 27.6, 27.8,	
,	Matter, Early Models of the Atom	28.1-28.2	
	Atomic Spectra		
25 st of July	Nuclear Physics	29.1-29.4 29.6-29.7	
26 th of July	Final Exam Review	Final Exam Review	
27 th of July	Final Exam	noon	
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