Physics 214

Instructor: Dr. Cecille Labuda
Class time/location: MWF 8:00 am Brevard 134
Office hours: MW 4 – 5pm, T 1 – 2pm Lewis 211. By appointment, 1031 NCPA except Thursday.

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Syllabus version: 01/23/2018.

Description

This is the second semester of a two-semester sequence in introductory general physics. Topics include electricity and magnetism, and geometric and wave optics.

Course Objectives

- Develop/improve analytical and problem solving skills. Students should be able to:
  - Analyze a problem to reduce it to its fundamentals and determine the related physics concepts.
  - Identify methods of solving problems.
  - Apply various problem solving techniques.
- Learn and apply physics concepts. Students should be able to:
  - Describe electromagnetic fields and explain how they arise.
  - Describe how electric currents arise and how they are related to electric potentials.
  - Describe how electricity and magnetism are related.
  - Describe the properties of light and the electromagnetic spectrum.

Required Text

Option 1 (Preferred)

- Giancoli, D. Physics: Principles with Applications 7/E or 6/E hardcopy text

Option 2

- Giancoli, D. Physics: Principles with Applications e-book.

Other Required Items

- *Online homework system: MyLab and Mastering.* The system must be set up and accessed through the MyLab link on Blackboard (blackboard.olemiss.edu). Students must obtain access to MyLab and Mastering. This can be done three ways. (1)Use the access code that may have come with your hardcopy text. (2)Purchase an access code on its own through the MyLab and Mastering link on Blackboard. (3)Purchase the e-book along with an access code.
- *Classroom response system: Top Hat*. Students must purchase access to Top Hat for use in class at tophat.com. You will receive an invitation to join the Tophat course.

Expectations

Class Preparation

- Students should expect to spend about 8 hours weekly, reading, doing homework and preparing for class in order to do well.
- Study the textbook regularly. Do not wait until just before the homework is due or a test is imminent. Class discussion will not cover all of the assigned material, but students will have the opportunity to ask questions about any of the assigned material.
- Assigned readings will be posted weekly on Blackboard.
- When reading the assigned textbook sections, identify concepts or reasoning that were not clear to you from the reading. Ask questions from your classmates or the instructor to clarify these points.
- Complete the MyLab and Mastering homework after reading the related material. It will take longer to complete the homework if the textbook reading assignments are not completed first.

In Class

- Students are expected to attend all classes and must sit in their designated seats.
- Students must bring a device to access Tophat to every class meeting.

Prerequisites / Corequisites

- Students enrolled must have passed Physics 213 and be enrolled in or have passed Physics 224.

Grading Scale

- $90\% \leq \mathbf{A} \leq 100\%$
- $80\% \leq \mathbf{B} < 90\%$
- $70\% \leq \mathbf{C} < 80\%$
- $50\% \leq \mathbf{D} < 70\%$
- $\mathbf{F} < 50\%$

Evaluation

Tests

- 3 closed-book tests: 15% each
  Total test weighting: ***45%***

Homework

- Homework must be submitted online using the online homework system, MyLab and Mastering.
- Students must turn in one written problem as indicated online. This problem MUST be written up according to the homework rubric posted on Blackboard or the grade for that problem will be zero.
- Students must keep a bound notebook with complete write-ups of the homework problems as well as completing the homework online. This will facilitate test preparation and review.
- No late homework will be accepted.
  Total homework weighting: ***20%***

Tophat Exercises

- In-class exercises will be given using the Tophat classroom response system. These exercises will be graded 80% for correctness and 20% for participation.
  Total quiz weighting: ***10%***

Final exam

- Comprehensive, closed-book final.
  Final exam weighting: ***25%***

Total: 100%

Policies

Attendance

Students are expected to attend all classes. University of Mississippi policy requires that attendance be verified for every student during the first two weeks of classes. Unverified students will be automatically dropped from class.

No make-ups of graded classroom exercises and presentations will be given except for absences due to verified university sanctioned activities. If you must be absent for tests, it is your responsibility to speak to me before the test to determine whether the absence will be excused and whether the test will be rescheduled. For unexpected test absences, you must contact me by email or telephone within 24 hours after the absence or the test will not be rescheduled under any circumstances.

Academic Integrity

Every student of the University of Mississippi, by virtue of choosing to be part of the university community agrees to abide by the University of Mississippi Creed and the UM Academic Integrity Policy which covers academic integrity. Cheating on any assignment is forbidden and, in this course, will result in a zero grade on the given assignment. If a second case of cheating occurs, this will result in an F for the entire course. Please consult the M-Book, Academic Integrity document for details on university policy and the academic creed.

UM Creed

The University of Mississippi is a community of learning dedicated to nurturing excellence in intellectual inquiry and personal character in an open and diverse environment. As a voluntary member of this community:

- I believe in respect for the dignity of each person
- I believe in fairness and civility
- I believe in personal and professional integrity
- I believe in academic honesty
- I believe in academic freedom
- I believe in good stewardship of our resources
- I pledge to uphold these values and encourage others to follow my example

University of Mississippi 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 or the use of non-captioned or non-transcribed video and audio files. Students must also contact Student Disability Services at 662-915-7128 so that office can 1) provide you with an Instructor Notification form, 2) facilitate the removal of barriers and 3) ensure you have equal access to the same opportunities for success that are available to all students.

Audio and video recording

Audio and/or video recording of class lectures is not allowed unless explicit permission is given by the instructor. Permission will only be given if the student has a Student Disability Services request. In such cases, recordings may only be used by the student to whom permission is given and all recordings must be deleted at the end of the semester. Recordings may not be distributed online or elsewhere.

Resources

- Free tutoring by graduate students is provided in the Tutoring Room in Lewis Hall. Students are, however, encouraged to form peer groups to work on homework collaboratively.
- Course grades will be posted on Blackboard. Grades posted on Blackboard are intended to keep students up to date with their grades and are NOT an official record of the grades. The posted midterm and final grades are the only official grade records. These grades are based on the grade record that I keep on my computer. Any differences between Blackboard grades and my grade record will be overridden by my record

Important Dates

- January 22 – classes begin
- March 5 – Midterm grades
- March 10 - 18 - Springbreak
- May 4 – last day of class

Examinations

Test dates and topics are subject to change. The final exam date is fixed and cannot be changed.

Test 1: Chapters 16 - 19	02/21
Test 2: Chapters 19 – 23	04/04
Test 3: Chapters 23 – 26	04/25

Final Exam: Chapters 16 - 26
Monday May 7, 8:00 am

Course Schedule (subject to change):

About one chapter of the textbook will be covered each week.

Week	Topic	Textbook Sections
01: 01/22 – 01/26	Electric charge, field	Ch 16
02: 01/29 – 02/02	Electric charge, field, potential	Ch 16, Ch 17
03: 02/05 – 02/09	Electric potential	Ch 17
04: 02/12 – 02/16	Current, DC circuits	Ch 18, Ch19
05: 02/19 – 02/23	DC Circuits **02/21: TEST 1**	Ch 19
06: 02/26 – 03/02	DC circuits, Magnetism	Ch 19, Ch 20
07: 03/05 – 03/09	Magnetism, induction, Faraday's law	Ch 20, Ch 21
08: 03/12 – 03/16	SPRING BREAK	
09: 03/19 – 03/23	Induction, Faraday's law	Ch 21
10: 03/26 – 03/30	Electromagnetic waves	Ch 22,
11: 04/02 – 04/06	Geometric optics **04/04: TEST 2**	Ch 23
12: 04/09 – 04/13	Geometric optics, wave nature of light	Ch 23, Ch 24
13: 04/16 – 04/20	Wave nature of light	Ch 24
14: 04/23 – 04/27	Optical instruments, special relativity **04/25: TEST 3**	Ch 25, Ch 26
15: 04/30 – 05/04	Special relativity	Ch 26