

Course Information

Course Content

Physics 227N/232N is the second semester of a two semester, calculus-based introductory physics course. In this course, you will be introduced to some core topics in physics - electricity and magnetism, light and optics, and a few ideas from quantum physics.

Course Description

Through in-class activities, lectures (limited), laboratories, reading and homework assignments you will learn how to use critical thinking combined with mathematics to describe simple physical processes and develop basic problem solving skills. In addition to covering both theory and experiment, we will also use computer simulations to model and visualize simple physical systems in order to gain insight into the underlying physics. There will be both individual and group activities. Group activities will stress teamwork and communication skills. Unlike the traditional lecture format, in this class we will rely on interactive instruction and cooperative learning.

Prerequisite

Physics 226N or 231N or equivalent is a prerequisite for this course.
Math 211 is a prerequisite, Math 212 is a co-requisite.

Required Material:

- **Essential University Physics**, 2nd Edition, Part 2 by Richard Wolfson.
- Access packet for “MasteringPhysics” online resources (if you purchased a bundle at the Bookstore last Spring, your MasteringPhysics Access is good for this semester also. You do not need to enter a new access code).
- *Turning Point Personal Response System (clicker)*.
An alternate is to purchase a subscription for your laptop or smart phone.
 - Available online at <https://store.turningtechnologies.com>.
 - Use ODU discount code NFDA
 - Our session ID in class is PHYS232HYDE
- *Two Bound class notebook* (one for homework and one for lab notes)

Lab Manual

You do not need to purchase a lab manual. Lab Handouts will be provided.

Optional Material

Spark Charts or Bar Charts for Physics

Course Website

We will be using *Blackboard* for our course website.

Lecturer

Professor Charles E. Hyde
Office: OCNPS/PSB 2100C
Office Telephone: (757) 683-5853
email: chyde 'at' odu.edu
Office Hours: MW, 3:00 – 4:00 pm in the Physics Learning Center and by appointment

Class Meeting Times

Monday and Wednesday, 12:00 – 1:50 pm and Friday, 1:00 – 1:50 pm, in OCNPS Room 142/144.

Reading Assignments

You will be given a reading assignment each week. You may be given a few *reading assignment questions* on occasion. It is essential that you complete your reading assignments and questions *before* lecture.

Homework

Physics is best learned by attempting to solve problems. This will allow you to become familiar with the concepts and comfortable with the mathematical methods required. A good portion of in-class time will be spent working on problems. In addition, you will be given a Homework Assignments each week. You will submit your homework solutions online using *MasteringPhysics*. Assignment solutions will be posted on the Blackboard Physics 227N/232N website.

MasteringPhysics: www.MasteringPhysics.com

The student access kit contains a code, which will allow you to register (if you are not already registered from last semester).

The **Course Code** is: MPHYDE85328

When entering your UIN (here or anywhere), be sure to include any leading zeros as the UIN may be read as a text string instead of a number.

Homework Journal

You should also keep a "homework journal" which shows how you solved the problems from the homework assignments. Written work must show labeled diagrams, defined variables, the appropriate physics equation(s), and the mathematical solution with units. Your Homework journal will be periodically collected and graded.

Group Work

You will be assigned to a group of three or four students. Groups may be reassigned periodically throughout the semester. Many class activities will require you to work together with your group members. At the beginning of each class period, three roles will be assigned at random: a *Leader*, a *Recorder*, and a *Skeptic*. The *Leader* will direct the team in solving that day's exercises. The *Recorder* will write out the solution on the whiteboard. The *Skeptic's* role is to critique the work of the others, and ask questions why they are working in a particular direction. Your group work is one of the critical learning tools in this class! The instructors will be walking around the room, asking questions about your work. Your engagement will have a strong influence on your learning (and your grade!).

Laboratory

Laboratory exercises will be integrated with in-class lectures and activities. You do not need to purchase a lab manual. Lab handouts will be distributed in class. Labs will vary in length and complexity and will be done in groups. Most labs will require formal lab reports. These should follow basic scientific report guidelines. Usually, each group will submit a single lab write-up, but you may be asked at times to submit an individual report. To receive credit for the group lab report, you must have contributed to the lab report. If a member of the group does not contribute to the report, that person's name must not appear on the lab report.

Quizzes

Quizzes will be given every Wednesday or Friday, except on exam weeks. A quiz consists of a few short problem-solving and descriptive questions designed to take you 20 minutes or less, if you are prepared. Generally, these will be taken with no books or notes, though an equation sheet may be used. There are no make-ups; however, the lowest quiz score will be dropped.

Examinations

This course will contain three in-class midterm examinations and a comprehensive final exam. Your lowest score on the in-class midterms will be dropped. If you must miss an exam, contact Dr. Hyde as soon as possible. Make-up exams will not be given, but **if you have a legitimate reason** for missing an exam, the average of your other completed midterm exams will be credited for the missed exam. All examinations are closed book. You will be permitted to use a calculator and formula sheet(s) of your own construction (both sides of a 8½"×11" sheet). Your sheet may not contain any worked problems.

Exam Dates

Exam 1: Monday, 17 September 2012. Chapters 20 – 22*
Exam 2: Wednesday, 10 October 2012. Chapters 20 – 25*
Exam 3: Monday, 12 November 2012. Chapters 20 – 29*
Final Exam: Monday, 10 December 2012: 12:30 – 3:30 pm. Chapters 20 – 32*

*Note that all exams are inclusive of all material from the beginning of Phys231.

Final Course Grade

A letter grade will be assigned at the end of the course on the basis of numerical scores obtained from the three in-class exams, the final exam, laboratory work, reading and homework assignments, lab reports, quizzes, class participation, and trend. The weighting will be *approximately* as follows

In-class exams	30%
Final Exam	30%
Homework Assignments	15%
Homework Journal	5%
Labs	10%
Quizzes	5%
Class participation*	5%

*Class participation includes clicker questions, class activities, Reading Quizzes, attitude...

Letter grades will be assigned as follows (on a 1000 point scale):

		A	1000 – 950	A-	949 – 900
B+	899 – 850	B	849 – 800	B-	799 – 750
C+	749 – 700	C	699 – 650	C-	649 – 600
D+	599 – 550	D	549 – 500	D-	499 – 450
		F	449 – 000		

Attendance

Attendance is **mandatory**. If you have to legitimately miss a class, it is your responsibility to find out what you missed. Additionally, if you know that you are going to be absent, please inform your group members so they are prepared to be short-handed that day.

The Physics Learning Center

Help with any aspect of physics is available in the *Physics Learning Center* (2nd floor atrium of the PSB), Monday-Friday 9am - 5pm.

The Physics Learning Center is a place where students can get together to work on their homework and get assistance, if needed, from physics faculty and grad students. No appointment is necessary. Students in all introductory classes are encouraged to drop by the Learning Center for help on homework, lab, lecture, other course material, or just for a place to work while in the physics building.

Note: staffing of the Physics Learning Center starts the *second* week of classes. More info, including a detailed staffing schedule, can be found at the following link:

http://sci.odu.edu/physics/resources/learning_center_fall_2012.shtml

University Honor Code

You are expected to conform to the University Honor Code in all aspects of your conduct in this course. You may work with others on the homework assignments. However, what you submit must represent your own understanding of the problem. Submitting answers online for problems that you have not worked out is *cheating*. Misconduct of any form will not be tolerated. If you are ever unsure of what is permissible, please consult with Dr. Hyde for clarification.

Class Schedule: on Blackboard, Schedule tab