I. Course: Physics 1322 - University Physics II

A. Catalog Description: Second semester of a two-part calculus-based course covering thermodynamics, electricity, magnetism, electromagnetic waves, optics, and modern physics. Primarily for science and engineering majors. Credit may not be applied toward degree for both PHYS 1322 and PHYS 1302.

B. Prerequisites: PHYS 1321 and credit for or concurrent enrollment in MATH 2433.

II. Course Objectives: The objective of this course is to learn the principles of electricity and magnetism, understand the concept of thermodynamics and be able to apply these concepts to solve problems.

Upon completion of this course, students will be able to:
1. master the physical concepts of electricity and magnetism;
2. be able to apply these to obtain solutions to technical problems;
3. use this scientific foundation to continue studies in more advanced courses in science and engineering.

Other learning outcomes include:
1. Students completing this course will be able to convey knowledge of the principles of physics and be able to use these principles to solve problems.
2. Students will be able to take a real life problem and use physical principles and mathematical tools to describe the problem.

III. Course Content: This course will cover chapters 17 - 36 which include the following topical areas:
1. Thermodynamics
2. Theory of Gases
3. Electric Charge and Electric Fields
4. Gauss’ Law
5. Electric Potential
6. Circuits
7. Magnetic Fields
8. Induction
9. Electromagnetic waves
10. Interference and Diffraction
11. Relativity

IV. Course Structure:

Computer and internet access are required for this course. For the current list of minimum technology requirements and resources, see http://www.uh.edu/online/tech/requirements. For additional information, contact the office of Online & Special Programs at UHOnline@uh.edu or 713-743-3327.

Blackboard, Mastering Physics, Microsoft Teams, and possibly other online resources will be required. See https://uh.edu/online/students/remote-learning/ for more information on remote learning tools.

V. Textbooks:

*University Physics with Modern Physics*, 15th edition, by Young and Freedman/Sears and Zemansky. Text with access code to Mastering Physics is available at the UH bookstore.

VI. Course Requirements

A. *(OPTIONAL) Reading Assignments:* Reading quizzes covering the material from the reading assignment, consisting of 2-3 questions/problems, will be assigned online for each chapter. The quizzes will be available at least 24 hours before they are due and they will be due by the beginning of the lecture time. There will be a time limit for taking the quiz and you will be allowed 2 attempts for each quiz. Solutions for the quizzes will be discussed during the lecture and will be posted on the class website.

B. Homework Assignments: *(See Pearson Mastering Physics for HW assignments)* 10 or more homework problems will be assigned at the beginning of each chapter and will be due approximately one week from that date.

C. Exams: There will be three regular exams and a final exam for a total of four exams for the course.

The regular exams will be online with Mastering Physics. They will cover 3-5 chapters and will consist of 10-20 multiple choice questions.

The final exam will be comprehensive covering all chapters covered for the course. The format of the final exam will be similar to that of a regular exam (Mastering Physics). The final will be given during the University Departmental Exam scheduled time.

Instructor’s policy on make-up exams can be added here.
D. Teamwork Component: A teamwork component will be evaluated in this course by one of the two methods below. (You must choose one of these or use some other form of teamwork.)

- Concept tests will be administered during lecture. Students will discuss these questions in teams as a method of peer instruction.

OR

- Teams consisting will be assigned to create a study guide for each of the exams for the course. The study guides will be posted in Blackboard and students will be able to choose the study guide which is best for use to prepare for the exam. Each group will have to work together to determine what will be included on the study guide and the best format for presenting it to the students.

VII. Evaluation and Grading

- 5% Teamwork Component
- 9% Reading Quizzes (Discretionary – may be used for Reading Quizzes, a few additional percent toward exam, up to instructor etc. Homework is to remain at 10%.)
- 10% Homework
- 17% Regular Exam I
- 17% Regular Exam II
- 17% Regular Exam III
- 25% Final Exam (Date and time)

Policy on grades of I (Incomplete): The temporary grade of I (incomplete) is a conditional and temporary grade given when students (a) are currently passing a course or (b) still have a reasonable chance of passing in the judgment of the instructor, but for non-academic reasons beyond their control have not completed a relatively small part of all requirements. Incompletes will be given only when documentation has been submitted to support the need to receive an incomplete, i.e., medical statements.

VIII. Consultation
Office hours and how to schedule an appointment.

IX. Bibliography
Fundamentals of Physics, Halliday, Resnick, and Walker;
The Feynman Lectures on Physics, R. Feynman, R.B. Leighton, and M. Sands

X. Tutoring
Students can take advantage of tutoring through the following:
Physics Learning Center - [http://www.uh.edu/nsm/physics/undergraduate/tutoring/](http://www.uh.edu/nsm/physics/undergraduate/tutoring/)

Private Tutor List - [https://uh.edu/nsm/physics/undergraduate/intro-course-info/](https://uh.edu/nsm/physics/undergraduate/intro-course-info/)

LAUNCH - [www.uh.edu/ussc/launch](http://www.uh.edu/ussc/launch)

At LAUNCH, students can:

- Take advantage of individual **Peer Tutoring**
- Attend a **Success Workshop**
- Set up an individual appointment with an **Academic Counselor**

**Addendum:** Whenever possible, and in accordance with 504/ADA guidelines, the University of Houston will attempt to provide reasonable academic accommodations to students who request and require them. Please call 713-743-5400 for more assistance.

**Academic Honesty:** It is each student’s responsibility to read and understand the Academic Honesty Policy found at [http://catalog.uh.edu/content.php?catoid=34&navoid=12627](http://catalog.uh.edu/content.php?catoid=34&navoid=12627)

**Religious Holy Days:** Students whose religious beliefs prohibit class attendance or the completion of specific assignments on designated dates may obtain an excused absence. To do so, please make a written request for an excused absence and submit it to your instructor as soon as possible, to allow the instructor to make arrangements. For more information, see: [http://catalog.uh.edu/content.php?catoid=34&navoid=1249](http://catalog.uh.edu/content.php?catoid=34&navoid=1249)

**Counseling and Psychological Services (CAPS)** can help students who are having difficulties managing stress, adjusting to college, or feeling sad and hopeless. You can reach CAPS ([www.uh.edu/caps](http://www.uh.edu/caps)) by calling 713-743-5454 during and after business hours for routine appointments or if you or someone you know is in crisis. Also, there is no appointment necessary for the “Let's Talk” program, which is a drop-in consultation service at convenient locations and hours around campus. [https://uh.edu/caps/outreach/lets-talk](https://uh.edu/caps/outreach/lets-talk)

**Standard Disclaimer:** This syllabus is subject to change at the discretion of the instructor.