UNIVERSITY of HOUSTON

COLLEGE OF NATURAL SCIENCES & MATHEMATICS HTTP://NSM.UH.EDU

COURSE TITLE/SECTION: Physics 1302 Introductory General Physics II/Class Number 13093

TIME: MoWe 1:00-2:30 PM **LOCATION:** Science & Research Bldg. 1, room # 116

FACULTY: Prof Seamus Curran **OFFICE HOURS**: MoWe 2:30-3:30 pm and by appointment SR1 525

E-mail: sacurran@uh.edu **Phone:** (713) 743-#### **FAX:** (713) 743-3589

I. Course: Physics 1302 - Introductory General Physics II

A. Catalog Description: Electromagnetism and modern physics.

B. Prerequisites: PHYS 1301. Primarily for majors other than physics and engineering. Credit may not be applied toward a degree for PHYS 1302 and University Physics II, PHYS 1322.

II. Course Learning Objectives: The objective of this course is to learn the principles of electromagnetism and modern physics.

Upon completion of this course, students will be able to:

1. comprehend and apply laws such as Gauss' law, Coulomb' laws and Kirchoff's law;
2. be able to apply basic physics laws to solve real life problems;
3. to develop the processes of logical thinking and reasoning.

Other learning outcomes include:

1. Students completing this course will be able to convey knowledge of the basics principles of physics and be able to use these principles to solve elementary problems.
2. Students will be able to take a real life problem and use physical principles and basic mathematical tools to describe the problem.
3. Student will have the ability to communicate orally and in writing in a clear concise manner the concepts of Physics.

III. Course Content: This course will cover chapters 16-32 which includes the following topical areas:

1. Electric Charge, Forces and Fields

2. Electric Potential and Potential Energy
3. Electric Current and DC Circuits
4. Magnetism and Faraday's law
5. Electromagnetic Waves
6. Optics
7. Quantum and Atomic Physics
8. Thermal Physics

IV. Course Structure:

Dr. Curran's email address is **sacurran@uh.edu** .
This course uses Blackboard, **http://www.uh.edu/blackboard/**.
This course uses the Pearson Mastering Physics online homework system, see below

V. Textbooks

Physics, 5th Edition (with Technology Updates), James S. Walker. Binder version with access code to Mastering Physics is available at the UH bookstore.

VI. Course Requirements

A. **(Optional) Warm up Assignments:** Reading quizzes covering the material from the reading assignment, consisting of 2-3 questions/problems, will be assigned over Blackboard 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. **Written Assignments:** (See **Pearson Mastering Physics** link in Blackboard 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 given at CASA and the date of each exam will be announced one week in advance. They will cover 2-5 chapters and will consist of 5-20 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 but the final will de given during the University Departmental exam scheduled time **in a classroom**.

There are no makeup exams for this course. The lowest exam score will be replaced by the final exam score if the final exam score is higher.

D. Student Success Program/Recitation Sessions: This section has been selected to participate in a program supported by a Howard Hughes Medical Institute (HHMI) grant. Because of this, the course will include recitation study groups. This program will provide early assistance to students who are having academic difficulties in the course and will provide worthwhile enrichment opportunities for students who are on-track.

Recitation sessions are held for one hour each week and begin the third week of classes; all students are invited to attend. You will receive information about the recitation schedule, and signing up for a time. These sessions provide the opportunity to participate in problem-solving activities designed to enhance your understanding and mastery of the course content.

It is HIGHLY RECOMMENDED that students who earned below a B in Phys 1301 attend recitations. Any student scoring below 70% on the 1st Regular Exam in this course MUST attend one recitation each week for the remainder of the semester. For these students, recitations will count for 50% of the Teamwork/Attendance component grade. Recitation attendance will be graded as the percentage of required recitation sessions attended. Students must arrive on time, stay for the entire session, and record their attendance.

E. Teamwork Component: A team work component will be evaluated in this course by one of the two methods below.

- Concept test will be administered during lecture for each chapter. Answers for the concept tests will be submitted using a personal remote system (clicker). Students will discuss these questions in teams of 2-3 students as a method of peer instruction.

  For the detailed information on purchasing a Clicker or Response Ware for your smart phone or tablet, please go to www.uh.edu/clicker.

  NOTE: See Blackboard for clicker registration instructions.

OR

- Teams consisting of 5-8 people will be assigned to create a study guide for each of the 4 exams for the course. The study guides will be posted in Blackboard and students will be able to choose the study 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
5% Attendance
10% Homework
18% Regular Exam I
18% Regular Exam II
18% Regular Exam III
26% Final Exam (May 2nd, 8-11am - IN A CLASSROOM)

Policy on grades of I (Incomplete): The grade of "I" (Incomplete) is a conditional and temporary grade given when a student, for reasons beyond his or her control, has not completed a relatively small portion of all requirements. Sufficiently serious, documented situations include illness, death in the family, etc.

VIII. Consultation

My office is located in room 525 and Science & Research Building #1. My mailbox is located in the Physic office, room 617 in Science and Research # 1. My office hours will be from MoWe 2:30 - 3:30 pm. If you cannot see me during those times, you may schedule an appointment with me by calling me at (713) 743-3507 or e-mailing me at sacurran@uh.edu.

IX. Bibliography

References: Physics, Algebra/Trig, Eugene Hecht; Fundamentals of Physics, Halliday, Resnick, and Walker; The Feynman Lectures on Physics, R. Feynman, R.B. Leighton, and M. Sands; OpenStax Online Free Textbook - https://openstax.org/subjects/science.

X. Tutoring

Students can take advantage of tutoring through the following:

Physics Learning Center - http://www.uh.edu/nsm/physics/undergraduate/tutoring/

Tutor List - http://www.uh.edu/nsm/physics/resources/

LAUNCH - www.uh.edu/ussc/launch
At LAUNCH, students can:

- Drop in for individual **Peer Tutoring** on over 100 different courses—no appointment necessary! LAUNCH is located in Cougar Village 1, room N109. http://www.uh.edu/ussc/launch/index.php.

- Attend a **Success Workshop**: http://www.uh.edu/ussc/launch/index.php.

- Set up an individual appointment with an **Academic Counselor**: **713-743-5411**

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://www.uh.edu/provost/policies-resources/honesty/index.php.

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 the Student Handbook.
http://catalog.uh.edu/index.php

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) 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. http://www.uh.edu/caps/outreach/lets_talk.html#hours

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