

SYLLABUS

Physics 100 – Survey of Physics

SEMESTER: Spring 2016 (January 11 – May 13)

COURSE TIME: MWF 1:30 – 2:20 pm
SECTION/CRN: Section 1/CRN 81724

CREDIT: 3 semester hours
LOCATION: PSB 217

INSTRUCTOR: Dr. Mark H. Slovak

OFFICE: Watanabe 313

TELEPHONE: (808) 956-2959

UH e-mail: mslovak@hawaii.edu

OFFICE HOURS: TuTh or by appointment.

TEXTBOOK(S): *Conceptual Physics*, P. G. Hewitt (Pearson), 13th/14th edition. Either printed text or etext through Pearson website is acceptable. **(Required)**.

SUPPLIES: A basic scientific calculator is most useful. It does not have to be a graphing calculator but should be able to express numbers in scientific notation (powers of ten).

COURSE DESCRIPTION: Physics 100 is a general survey course of selected topics in physics intended for non-science majors. A minimum of geometry and algebra is used to support discussion of key developments in physics since 500 BCE through the latest discoveries in the 21st century, such as dark matter, dark energy and the Higgs boson.

PREREQUISITE: Basic knowledge of geometry and algebra (Algebra I). Students should be able to interpret graphs, tables and figures. Knowledge of customary or English units is expected and will be expanded with metric or SI units.

LAB: Students may enroll in PHYS 100L for a one (1) semester laboratory credit. It is highly recommended that students enroll in the lab concurrently with the lecture.

CLASS POLICIES: The University does not have a mandatory attendance policy nor is roll taken each class period. Occasional unannounced reading quizzes are given and serve as proof of attendance. Each student is responsible for all materials presented, including lecture notes and in-class demonstrations. If a class is missed for a valid reason (family emergency, medical, university-related travel), it is the student's responsibility to contact the instructor (using UH Manoa e-mail mslovak@hawaii.edu) to obtain any assignments or additional information. My faculty mailbox is in the department office (Watanabe 416) and ALL items should be placed in it ONLY (do not slip papers under my door as they may be discarded).

STUDENT CONDUCT: It is also the student's responsibility to be familiar with the University *Code of Conduct* outlining the University's policy regarding academic dishonesty and other prohibited behaviors. Important excerpts are listed below:

University of Hawaii: **Conduct – Rules and Regulations**

Engaging in any of these behaviors subjects a student to the disciplinary process and sanctions on each campus.

1. Acts of dishonesty, including but not limited to the following:
 - a. *Cheating, plagiarism, or other forms of academic dishonesty.*

The term "cheating" includes, but is not limited to: (1) use of any unauthorized assistance in taking quizzes, tests, or examinations; (2) use of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or carrying out other assignments; (3) the acquisition, without permission, of tests or other academic material belonging to a member of the UH faculty, staff or student (4) engaging in any behavior specifically prohibited by a faculty member in the course syllabus or class discussion.
2. Disruption or obstruction of teaching, research, administration, disciplinary proceedings, other UH activities. Creating noise or other disturbances on campus sufficient to disrupt the normal functioning of campus activities including classroom instruction.
3. Threatening or endangering the health or safety of any person including but not limited to, physical abuse, verbal abuse, threats, intimidation, harassment, coercion, or stalking.
4. Sexual advances, requests for sexual favors or other behavior of a sexual nature that is unwelcome and sufficiently severe or pervasive that it interferes with a person's academic or professional performance or creates an intimidating, hostile or offensive educational environment.

CIVILITY: Students are expected to be on-time for class, courteous about not talking and silencing phones during lecture and not banging desktops near the end of lecture. *Always* put your class (PHYS100) in the subject header of email so I can identify you quickly.

HOMEWORK: In addition to weekly chapter reading assignments, **five (5) homework assignments** in the *Mastering Physics* website will be assigned. Homework is to be completed by the due date listed with each assignment. **(10% of course grade).**

QUIZZES: Announced quizzes will usually be given during a Friday lecture for a total of **three (3) quizzes**. Occasional *unannounced reading quizzes* will be given for *attendance* purposes. Solutions to quizzes will be posted in Lulima. See Class Schedule for quiz dates. **(20% of course grade).**

EXAMS: **Two (2) in class multiple choice/short answer exams** are scheduled during the semester. Each exam covers the material since the previous exam and includes extra credit questions. Solutions to exams will be posted in Lulima. See Class Schedule for exam dates. **(50% of course grade).**

FINAL EXAM: A **comprehensive 2 hour final exam** is given on Monday, May 9, 2016 from 2:15 – 4:15 pm in the regularly scheduled classroom (PSB 217). **(20% of course grade).**

STUDENT LEARNING OUTCOMES (SLOs): After successfully completing Physics 100, students should be able to:

- describe key concepts of classical Newtonian physics;
- describe the basic principles of Einstein's theory of special relativity;
- compare and contrast the classical and quantum mechanical models of the atom;
- discuss the dual particle and wave nature of light and subatomic particles;
- relate fundamental physics concepts to extant and developing technologies.

PROVISIONAL GRADING: The preliminary grading scale used to assign the final grade is given below and is subject to minor revision (i.e. "curving") at the discretion of the instructor based on class performance.

A: 90 - 100% B: 80 - 89% C: 70 - 79% D: 60 - 69% F: < 60%

MAKEUP: Students are strongly encouraged NOT to miss any quizzes or exams during the semester, unless a valid reason such as medical emergency arises or excused university travel. *All makeup quizzes or exams will be scheduled during the instructor's office hours or by appointment only and must be made up within one (1) week of quiz/exam date.*

SPECIAL SERVICES: Students with special needs and accommodations are requested to contact the UH Manoa KOKAU program for accommodation regarding extended time and assistance for quizzes and exams. Go to <http://www.hawaii.edu/kokua/> for more information.

ADDITIONAL RESOURCES: For additional help outside of office hours and forming student study groups, students may receive additional assistance at:

- the Natural Science Learning Emporium in Bigler Addition 209, open weekdays for all students taking lower division math and science classes.

There are many physics websites, with video lectures, demonstrations, explanations and simulations. Some are free to access and others require a fee. One free website that is recommended is *The Physics Classroom* at:

<http://www.physicsclassroom.com/>

PEARSON WEBSITE *Mastering Physics*: Students may purchase either the printed text through the UH Manoa bookstore OR purchase a discounted one (1) semester access for Hewitt, *Conceptual Physics* 12e. The cost is \$70.00 with etext OR \$40.00 without etext. ALL students must enroll at:

http://www.pearsoncustom.com/hi/hewitt_conceptualphysics/

in order to complete homework assignments by *the end of the first week* of classes.