

## SYLLABUS

### *Physics 151 – College Physics I*

SEMESTER: Fall 2015 (August 24 – December 18, 2015)

COURSE TIME: MWF 9:30 - 10:20 am      CREDIT: 3 semester hours  
Section 001    CRN 72266                      LOCATION: PSB 217

INSTRUCTOR: Dr. Mark H. Slovak              OFFICE: Watanabe 313  
TELEPHONE: (808) 956-2975                  e-mail: mslovak@hawaii.edu  
OFFICE HOURS: M W F 10:30 – 11:30 am or by appointment.  
TEXTBOOK(S): *College Physics*, (OpenStax College: Rice University), June 2012. Go to <https://openstaxcollege.org/textbooks/college-physics>. **(Required)**.

SUPPLIES: Scientific calculator with scientific notation, logarithmic and trigonometric functions (including inverse functions). A scientific graphing calculator is most useful but more expensive. **(Required)**. Notebook for class lectures, pencils, protractor, compass, and six inch ruler may also prove useful.

COURSE DESCRIPTION: Physics 151 is the first semester of a two-semester sequence in college level physics (151-152) It begins with a review of trigonometry, leading into the algebra of vectors. Basic one and two-dimensional kinematics are covered and set the stage for Newton's laws of motion and gravity. General concepts of work, energy, impulse and momentum are discussed and motivate an introduction to torque and rotational motion (including circular motion). Other topics include simple harmonic motion, fluids, temperature, heat, thermodynamics, and waves with an emphasis on sound.

PREREQUISITE: Math 140 (Trigonometry/Analytic Geometry) or Math 215 (Applied Calculus I) or higher. Alternately, a passing score on the Math Placement Exam (both Part I and Part II).

LAB: It is highly recommended that the Physics 151L (*College Physics Laboratory I*) be taken concurrently with the lecture class. However, concurrent enrollment is *not mandatory* for all students and there are only a limited number of lab sections.

CLASS POLICIES: The University does not have a mandatory attendance policy nor is roll taken each class period. Each student is responsible for all materials presented, including lecture notes, demonstrations and quizzes. If a class is missed, it is the student's responsibility to contact the instructor (using e-mail) or other students to obtain any assignments or additional information. Be prepared to show dated lecture notes as proof of attendance. It is also the student's responsibility to be familiar with the University *Code of Conduct* outlining the University's policy regarding academic dishonesty.

Specifically:

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B. Conduct – Rules and Regulations

The following are examples of the types of behavior that conflict with the community standards that the UH values and expects of students. Engaging in, or attempting to engage 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.
    - b Furnishing false information to any UH official, faculty member, or office.
    - c Forgery, alteration, or misuse of any UH document, record, or form of identification.
  - 2 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. ALL cases of suspected academic dishonesty are referred to the Dean of Students for disciplinary action if deemed appropriate, up to and including expulsion from the University.
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**HOMEWORK:** In addition to weekly chapter reading assignments, there are **seven (7) homework assignments**. Homework is to be completed *by class time* of the due date. (7% of course grade).

**QUIZZES:** Announced quizzes will usually be given during a Friday lecture for a total of **four (4) quizzes**. *Unannounced* reading quizzes may be given. (16% of course grade)

**EXAMS:** **Three (3) class period multiple choice/short answer exams** are scheduled during the semester. Each exam covers the material since the previous exam and includes extra credit questions. Each exam is weighted equally towards the course grade. See Class Schedule for exam dates. (54% of course grade)

**FINAL EXAM:** A **comprehensive 2 hour final exam**. (23% of course grade)

**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 classes during the semester, unless a valid reason such as personal or family medical emergency arises. *All makeup exams will be scheduled during the instructor's office hours or by appointment only*. Missed quizzes are not made up as the lowest quiz score will be dropped. However, a copy of the quiz may be obtained for study purposes.

**University of Hawai'i at Manoa**  
**Department of Physics & Astronomy**

STUDENT LEARNING OUTCOMES (SLOS):

After successfully completing Physics 151, students should be able to:

- demonstrate significant physics problem solving skills;
- understand and be able to convert between US Customary and SI (metric) units of measurement;
- define and explain the terminology of vectors, mechanics, uniform and accelerated motion, work, energy, momentum, thermodynamics, waves and fluids;
- recognize the principles of physics that form the basis for technologies and be able to apply and solve the appropriate algebraic equations that are derived from such principles;
- show proficiency in using a scientific calculator to perform numerical solutions to the equations of algebraic physics, including using trigonometric, exponential and logarithmic functions; and their inverses.

SPECIAL SERVICES: Students with special needs and accommodations are requested to contact the UH Manoa KOKUA program for accommodation authorizations and information about testing procedures. Go to <http://www.hawaii.edu/kokua/> for more information.

ADDITIONAL RESOURCES: For additional help beyond forming your own student study groups, students can get individual assistance at:

- The **Physics Learning Center** in Watanabe 421. Open whenever Watanabe Hall is open (weekdays) for all students to use. There are tables, sofas, and blackboards for use. Also, Physics Lab TAs schedule their two weekly office hours here as tutoring hours and will help with lecture related questions. Check the posted schedule in W421.
- The **Natural Science Learning Emporium** in Bigler Addition 209 is open weekdays for *all* students to receive help with lower division math and science classes. Schedule for tutors for physics are posted on BilA 209 or can be found at <http://www.hawaii.edu/natsci/physics.php> but note that physics tutoring begins on the second week of August, starting August 31.
- The **Learning Assistance Center** in Sinclair Library offers free, one-on-one tutoring for PHYS 151 and PHYS 152, as well as for other math and science classes. Go to <http://manoa.hawaii.edu/undergrad/learning/tutoring/> for more information.