Physics 1401-A3
College Physics I
Blinn College – Bryan Campus
Fall 2009

Instructor: Grady Hendricks
Office: G205
Office Hours: MW 12:30 pm – 1:15 pm
(other times by appointment)

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Course Web site: http://www.blinn.edu/brazos/natscience/ghendricks/physics1401/

Classroom Locations and Meeting Times:

Lecture	Lab
Room G231 MW 1:25 pm – 2:40 pm	Room G231 MW 2:50 pm – 4:05 pm

Course Description:
A course designed primarily for students preparing for careers in architecture, biology, medicine, pharmacy and other fields requiring two semesters of physics. Topics covered include fundamentals of classical mechanics, heat and sound. *Prerequisites:* Two years of high school algebra with grade of "C" or better or Math 1314. Knowledge of basic trigonometry is also useful.

Core Curriculum Course:
This is a course in the 42-hour Core Curriculum of Blinn College. Students will develop proficiency in appropriate intellectual competencies, exemplary educational objectives and general perspectives. The URL of the Blinn College core curriculum web site is www.blinn.edu/corecurriculum/42hourcore.htm.

Course Objectives and Student Learning Outcomes:
Upon completing this course, students should be able to accomplish the following goals using algebra and basic trigonometry. Lecture and laboratory work will focus on these learning outcomes.

- Apply the equations of kinematics for objects moving with constant acceleration in one and two dimensions.
- Use vectors in solving physics problems.
- Apply Newton's laws of motion to one- and two-dimensional linear dynamics problems.
- Utilize the definition of work, the work-energy theorem and the principle of conservation of energy in solving physics problems.
- Apply the principle of conservation of linear momentum.
- Apply the equations of rotational kinematics for objects rotating with constant angular acceleration.
- Apply the equations of rotational dynamics, including the principle of conservation of angular momentum.
- Utilize principles such as Newton's law of universal gravitation, conservation of energy or Kepler's laws to solve problems in gravitation.
- Describe selected properties of oscillations and waves.
- Distinguish between the concepts of heat and temperature. Use the concept of specific heat in solving problems involving calorimetry.
- Apply the concept of latent heat to problems involving phase changes. Describe various properties of ideal gases.
- Recognize, explain and apply the laws of thermodynamics.

Overall objectives for the course include the following:

- The student will maintain grade of **D** (60%) for completion of the course. This grade will include both lecture and laboratory components.
- The student will develop improved problem-solving skills.
- The student will develop an enhanced appreciation for the integration of physics and math and improved skill in interpreting the physical meaning of mathematical equations which occur naturally in the course.

Laboratory work will be chosen to reinforce the above lecture topics. The student will demonstrate in the laboratory an understanding of the experiment through writing a report that analyzes the data and interprets the results.

Textbooks and other materials:

- **Required Textbook:** James S. Walker, *Physics*, 3rd edition (Vol. I)
- **Required Homework System:** Students *must* purchase an access key to *MasteringPhysics*, the textbook publisher's online homework system. This is bundled with the textbook at the Blinn bookstore. Alternatively, the access key can be purchased online at www.masteringphysics.com; be sure to select the Walker text above to pair with *MasteringPhysics.* The *MasteringPhysics* CourseID for this course is **BLINN1401A3FA09.**
- **Required Laboratory Manual:** *Physics 1401 Laboratory Manual*. Available for a nominal fee at the copy center on the first floor of the Bookstore Building on the Blinn campus.
- **Scientific Calculator:** Non-Programmable (non-graphing) scientific calculator. Examples of acceptable calculators include the TI-30, TI-34, TI-36 and the Casio FX-250, FX-260 and FX-300.

ADA Statement:
Students with physical or learning disabilities must contact the Office of Disability Services (Room 157, Science Bldg.) to receive accommodation on exams and assignments. The Office of Disability Services will provide the student with an accommodation letter specifying the accommodations that are to be provided to the student. The student must present this letter to the instructor in order to receive accommodation. Accommodation is not retroactive.

Class Policies
Attendance
The College District believes that class attendance is essential for student success; therefore, students are required to promptly and regularly attend all their classes. Each class meeting builds the foundation for subsequent class meetings. Without full participation and regular class attendance, students shall find themselves at a severe disadvantage for achieving success in college. Class participation shall constitute at least ten percent of the final course grade. It is the responsibility of each faculty member, in consultation with the division chair, to determine how participation is achieved in his or her class. Faculty will require students to attend class regularly and will keep a record of attendance from the first day of class or the first day the student's name appears on the roster through final examinations. If a student accumulates one week's worth of unexcused absences during the semester, he or she will be sent an e-mail by the College requiring the student to contact his or her instructor and schedule a conference immediately to discuss his or her attendance issues. **Should the student accumulate two weeks' worth of unexcused absences he or she will be administratively withdrawn from class.**

There are three forms of excused absence officially designated by Blinn College: (1) observance of religious holy days: The student should notify his or her instructor not later than the 15th day of the semester concerning the specific date(s) that the student will be absent for any religious holy day(s); (2) representing Blinn College at an official institutional function and (3) official involvement in a high school activity for "dual credit" students. Other excuses will be considered and may be considered excused at the instructor's discretion, with documentation. **Missing lecture or lab counts as one absence. If a student misses both lecture and lab periods for a given day, this counts as only one absence.**

Student E-mails
All Blinn students have been assigned a Blinn e-mail address that must be checked regularly for official communications and course information. This e-mail account can be accessed at mail.live.com. Your e-mail address (and Windows Live ID) is of the form *Firstname.LastnameXX*@buc.blinn.edu. (XX = last two digits of Blinn ID.) Your initial password is your Blinn ID number. Additional information about accessing this account can be found at www.blinn.edu/acadtech/studentemail/.

Dropping
If a student chooses to drop the course, it is that student's responsibility to complete a drop order at the Office of Enrollment Services. Failure to do so could result in a grade of F in the course.

Make-up work
Students will not be permitted to make up missed work except in extremely rare circumstances. Before any make-ups are permitted, students must provide the instructor with appropriate documentation. Permission to make up work will be granted solely at the discretion of the instructor.

Laboratory Work
When you are working through the experiments, you should focus on making sure you have made all the required measurements and have recorded all the required data. Only after this is completed should you spend class time working through calculations called for in the experiment. If you do not complete the calculations in class, I expect you complete them outside of class.

You may hand in labs at any time up until the time I begin grading them. However, once I start grading them, I will not accept any additional labs.

Eating and Drinking
Eating and drinking are not allowed in classrooms or laboratories.

Classroom Civility
Members of the Blinn College community, which includes faculty, staff and students, are expected to act honestly and responsibly in all aspects of campus life. Blinn College holds all members accountable for their actions and words. Therefore, all members should commit themselves to behave in a manner that recognizes personal respect and demonstrates concern for the personal dignity, rights, and freedoms of every member of the College community, including respect for College property and physical and intellectual property of others.

If a student is asked to leave the classroom because of uncivil behavior, the student may not return to that class until he or she arranges a conference with the instructor. It is the student's responsibility to arrange this conference.

Mobile Phones
All mobile phones must be turned off at all times while in the classroom or lab.

Scholastic Dishonesty
Blinn College does not tolerate cheating, plagiarism, or other acts of dishonesty. Definitions of these acts and procedures for dealing with them are described in "Scholastic Dishonesty" in the Blinn College Student Handbook, copies of which are available at the information desk in the Administration Building. On group quizzes, consultation with the members of your lab group is expected and, in fact, encouraged. You may also wish to consult with your lab partners in preparing your laboratory report. However, **each student is expected to hand in his or her *own* lab report.** Also, in your lab reports, you are expected to be **absolutely honest** when presenting your data and answering questions about your results. This means that you **do not ever falsify, erase, white out, or otherwise alter** your experimental results, nor do you ignore or exclude some data points when drawing conclusions about your experimental results without presenting a convincing argument stating *why* those data points should be ignored or excluded. Furthermore, cheating on exams will not be tolerated. Any violation of these rules may result, at the very least, in your receiving a zero for any work affected by the violation.

Description of Course Content and Tentative Class Schedule:
The course will cover Chapters 1-18 in the text. I will try to post a tentative schedule for the lectures and the labs on the Web site. The material covered on the exams and tentative dates for the exams are as follows:

Exam	Material Covered	Date (tentative)
1	Chapters 1-5	Wed., Sep. 30
2	Chapters 6-9	Mon., Nov. 2
3	Chapters 10-14	Mon., Nov. 23
Post-test and Final Exam	**Chapters 1-18**	**Fri., Dec. 11, 3:15 pm – 5:15 pm, G231**

Criteria for Grading: Grades will be based on exams, labs, homework, and quizzes.

- **Exams:** All exams will be closed-book and closed-note exams. Exams 1-3 will be partially multiple choice and partially free-response ("show-your-work"). The final will be entirely multiple choice. For any question in which you must do some calculation to get an answer, **you must show your work in doing the calculations in order to receive credit!**
- **Labs:** There will be a lab exercise approximately once per week. Students' lowest lab grade will be dropped.
- **Online Homework:** We will use the textbook publisher's online homework system, *MasteringPhysics*. Students' lowest homework grade will be dropped.
- **Quizzes:** Approximately 5-10 quizzes will be given. Most of these will be *group quizzes* or *take-home quizzes* and will be announced in advance. Group quizzes are timed quizzes that you work on in class with the members of your lab group. On group quizzes, you may use your class notes, but not the textbook. On take-home quizzes, you may use any resources.

  In addition, it is possible that there could be *unannounced* quizzes. These are quizzes that you work on individually and that are, of course, not announced in advance.

  Students' lowest quiz grade will be dropped.
- **Grading summary:** Exams 1-3 (13% each), Final (24%), Labs (15%), Online homework (12%), Quizzes (10%).

The grading system of Blinn College is as follows*:

A = 90 –100 Superior
B = 80 – 89 Above Average
C = 70 – 79 Average
D = 60 – 69 Passing
F = < 60 Failing

*from Board Policy Manual EGA(LOCAL), issued 05/24/2004

Important dates to remember:

Last day to register or add classes	Friday, September 4
Last day to drop course with a grade of "W"	Friday, November 20
Holiday (Thanksgiving)!	**November 25 through 27**
Final Exam	**Friday, December 11, 3:15 pm – 5:15 pm, G231**