

**Physics 1410-A1
College Physics II
Blinn College – Bryan Campus
Fall, 2009**

Course Information Sheet

Instructor: Jeff Bronson

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Office Hours: MTWR 10:30 am – 11:00 am

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MTWR 4:05 pm – 5:00 pm (also other times by appointment)

Course Web site: <http://www.blinn.edu/brazos/natscience/jbronson/>

Classroom Locations and Meeting Times:

Lecture	Lab
Room G213 TR 1:25 pm – 2:40 pm	Room G233 TR 2:50 pm – 4:05 pm

PURPOSE STATEMENT

The purpose of the physics component in the core curriculum is to enable the student to understand the basic concepts of classical physics and to apply that understanding to the analysis of current issues in society.

COURSE DESCRIPTION

A conceptual level survey (with a minimum of mathematics) of topics in physics intended for liberal arts and other non-science majors. Topics include mechanics, heat, wave motion, electricity, magnetism, light, atomic and nuclear physics and relativity. The course is designed for students who do not intend to do further work in natural sciences, engineering, mathematics or medicine. **Prerequisites:** None. Three class hours and three laboratory hours per week. **Credit:** Four semester hours.

Core Curriculum Course:

This is a course in the 42-hour Core Curriculum of Blinn College. As such, 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.htm

The expanded course description is:

A. MECHANICS

- 1) Linear Motion and Newton's Laws
- 2) Momentum, Work, Energy and Power.
- 3) Rotational Motion
- 4) Law of Gravity, Projectiles and Satellite Motion
- 5) Atomic Nature of Matter

6) Solid, Liquid, Gases and Plasma

B. THERMODYNAMICS

- 1) Temperature, Heat and Thermal Expansion
- 2) Phase Changes and Heat Transfer
- 3) Thermodynamics

C. VIBRATION, WAVES AND SOUND

D. ELECTRICITY AND MAGNETISM

- 1) Electrostatics
- 2) Electric Current
- 3) Magnetism
- 4) Electromagnetic Induction

E. LIGHT

- 1) Properties of Light Waves and Color
- 2) Reflection and Refraction
- 3) Light Emission and Light Quanta

F. MODERN PHYSICS

- 1) Atomic and Nuclear Physics
- 2) Relativity

COURSE OBJECTIVES AND STUDENT LEARNING OUTCOMES

Upon completing the course students should be able to do the following objectives using minimal amounts of mathematics. Lecture and laboratory work will emphasize the following desired outcomes.

Students will be able to:

Identify and define common terminology associated with Physics.

Apply the principles associated with constant acceleration to one and two-dimensional motion.

Identify or apply the appropriate Newton's Law to a given situation.

Apply the conservation of mechanical energy to simple systems.

Describe the conservation of momentum as it applies to collisions and identify the primary difference between elastic and inelastic collisions.

Apply the concepts of physics to rotational motion.

Identify the primary properties of the states of matter, including how atoms are the building blocks of matter.

Describe basic thermodynamic principles and properties including temperature, heat transfer, phase changes, and the laws of thermodynamics
Describe and identify basic principles of electricity and magnetism.
Apply basic wave properties to light and sound.
Identify observed phenomena associated with the behavior of light as a wave and particle.
Identify basic atomic and nuclear processes and the applications of said processes.

Laboratory work will be chosen to reinforce the above lecture topics.

By the end of the course the student will maintain a minimum grade of **D** (60%) for completion of the course. This grade will include both lecture and laboratory components.

COURSE REQUIREMENTS

This physics course is a survey of the fundamental concepts of physics as listed above. Therefore all topics in the basic course material should be presented and discussed along with available supporting laboratory exercises.

Textbooks and other materials:

MATERIALS REQUIRED

TEXTBOOK:

Conceptual Physics, 10th ed., Paul G. Hewitt, Addison Wesley, San Francisco, CA, 2005
Graph paper and a four-function calculator

ADA Statement:

Students with physical or learning disabilities must contact the [Office of Disability Services](#) (Room 165, 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. 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, using their official Blinn email address, 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.

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.

Blinn Email

Students are assigned an E-mail address that must be checked regularly for official Blinn communications and course information. For information go to www.blinn.edu/acadtech/studentemail/ .

The address is of the form: Firstname.LastnameLast2digitsBlinnID@buc.blinn.edu .

Make-up work

Students will not be permitted to make up missed labs 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

Except for a few circumstances, you will have only one lab period in which to work on the laboratory experiments. Additional class time for working on these experiments will be given solely at the discretion of the instructor. This means that 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 due date; afterwards a penalty will be assessed.**

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 the issue is resolved. A written resolution report is sent to the Dean for Academic Affairs.**

Electronic Devices

Cell phones and electronic devices should be off in the class/lab except in an emergency situation.

Calculators

Calculator memories **must** be cleared before every exam. Violations will be considered to be an academic dishonesty matter.

Dress Code

Faculty and students are expected to dress appropriately in the classroom and lab following generally accepted standards of neatness, cleanliness, modesty and good taste.

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 to some extent all the material in the text. The material covered on the exams and tentative dates for the exams are as follows:

Exam	Material Covered	Date (tentative)
1	Chapters 1 - 7	Thu., Sep. 24
2	Chapters 8 - 14	Thu., Oct. 22
3	Chapters 22 - 31	Thu., Nov. 19
Final Exam	Chapters 1-36	Tue., Dec. 15, 12:45 pm – 2:45 pm

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

- **Quizzes:** Numerous quizzes will be given. Many will be group quizzes complete during class while working other members of your class. On group quizzes you may also use your class notes and the textbook. Each person will turn in their own copy of any group quizzes. There will be quizzes that you work on individually and many will not be announced in advance. Students' lowest quiz grade will be dropped.
- **Exams:** All exams will be closed-book and closed-note exams.
- **Labs:** There will be numerous lab exercises during the semester.
- **Grading summary:** Exams 1-3 (15% each), Final (25%), Labs (15%), Quizzes (15%).

Important dates to remember:

Monday, Aug. 31	Classes begin
Friday, Sep. 4	Last day to register
Friday, Nov. 20	Last day to drop course with a grade of "W"
Wednesday, Nov. 25 - Friday, Nov. 27	Holiday (Thanksgiving)
Tuesday, Dec. 15, 12:45 pm – 2:45 pm	Final Exam

Blinn College grading system [Board Policy Manual EGA(LOCAL), issued 05/24/2004]:

A = 90 – 100 Superior; B = 80 – 89 Above Average; C = 70 – 79 Average;

D = 60 – 69 Passing; F = < 60 Failing