

**Physics 1402-A1  
College Physics II  
Blinn College – Bryan Campus  
Spring, 2010**

**Course Information Sheet**

**Instructor:** Jeff Bronson

**Office:** G203

**Office Hours:** MTWR 10:30 am – 11:30 am  
MTWR 1:30 pm – 2:50 pm  
Also other times by appointment

**Email:** [jeff.bronson@blinn.edu](mailto:jeff.bronson@blinn.edu)

**Phone:** (979) 209-7419 (O)

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

**Classroom Locations and Meeting Times:**

Lecture	Lab
Room G213 MW 7:45 am – 9:00 am	Room G233 MW 9:10 am – 10:25 am

**Course Description:**

A continuation of Physics 1401. Topics covered include fundamentals of electricity, magnetism, light and some modern physics.

**Prerequisites:** Physics 1401.

**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.htm](http://www.blinn.edu/corecurriculum.htm).

**Course Objectives and Student Learning Outcomes:**

Upon completing this course, students should have a grasp of the concepts listed below and be able to solve problems using algebra, basic trigonometry and these concepts. Lecture and laboratory work will focus on the following learning outcomes:

- Apply Coulomb's law describing the electrostatic interaction between point charges and solve qualitative problems involving Gauss's law.
- For discrete charge distributions, calculate the net electric field, net potential and the electric potential energy; solve problems involving relationships among electric fields, potential and potential energy.
- Solve problems involving capacitors with and without dielectrics.
- Analyze basic DC circuits, including calculating equivalent resistances, equivalent capacitances, currents and voltages.
- Analyze the transient response of circuits such as  $RC$  and  $RL$ .
- Find the force on charged particles and current-carrying wires due to magnetic fields, and find the magnetic field due to currents.
- Apply Faraday's law and Lenz's law to problems involving electromagnetic induction.
- Solve problems involving combinations of resistors, capacitors and inductors driven by AC sources.
- Solve problems involving electromagnetic radiation, including problems on such concepts as energy density, intensity, polarization, radiation pressure and momentum.
- Use the principles of geometric optics to solve problems involving reflection and refraction of light in applications such as plane mirrors, spherical mirrors and thin lenses.

- Use the principles of physical optics to solve problems involving interference and diffraction of light.
- Apply principles of modern physics to solve problems involving quantization of energy and momentum on topics such as blackbody radiation, the photoelectric effect and the Compton effect.

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*, 3<sup>rd</sup> edition (Vol. II)
- 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](http://www.masteringphysics.com); be sure to select the Walker text above to pair with *MasteringPhysics*.

**This course ID is BLINN1402A1SP10**

- Required Laboratory Manual: *Physics 1402 Laboratory Manual*. Available at copy center on first floor of G Building (Bookstore Building).
- A scientific calculator

**ADA Statement:** Reasonable accommodations for students with documented learning or physical disabilities will be made upon presentation of a formal request by the student. An official request form is supplied and completed by the Office of Disability Services (ODS) located in the College Park Center Administration Building. The URL to the Office of Disability Services webpage is <http://www.blinn.edu/disability.htm>. Accommodation is not retroactive from the time of concluding agreement for accommodation.

#### **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 four forms of excused absence officially designated by Blinn College: (1) Observance of religious holy days: The student should notify his/her instructor(s) not later than the 15<sup>th</sup> 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; (3) official involvement in a high school activity for "dual credit" students; and (4) military service. Other excuses will be considered and may be considered excusable at the instructor's discretion, with documentation. **Missing lecture or lab or both will count as 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/](http://www.blinn.edu/acadtech/studentemail/) . The address is of the form: [Firstname.LastnameLast2digitsBlinnID@buc.blinn.edu](mailto: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.

**Civility Statement:** 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 the physical and intellectual property of others. Civility applies to attire as well as language, behavior, and cell phone usage. Please dress appropriately for the academic classroom and laboratory.

**If a student is asked to leave the classroom or have access to the online classroom denied 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 for this conference. A written resolution report is sent to the Dean for Academic Affairs.**

**Problem Resolution:** If you have a complaint about your class, you should first request a conference with your instructor to try and resolve the problems or issues. If the problems or issues cannot be resolved at the instructor level, you should request a conference with the Division Chair, Mr. Dwight Bohlmeier, Science 241, [dbohlmeier@blinn.edu](mailto:dbohlmeier@blinn.edu).

### ***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 Chapters 19-32 in the text. The material covered on the exams and tentative dates for the exams are as follows:

<b>Exam</b>	<b>Material Covered</b>	<b>Date (tentative)</b>
1	Chapters 19-21	Wed., Feb. 10
2	Chapters 22-24	Wed., Mar. 10
3	Chapters 25-28	Wed., Apr. 14
<b>Final Exam</b>	<b>Chapters 19-32</b>	<b>Mon., May 10, 7:45 am – 9:45 am</b>

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

- **Quizzes:** Numerous quizzes will be given. Many will be group quizzes completed during class while working with 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 each group quiz. 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 at least eight lab exercises during the semester.
- **Online Homework:** We will use the textbook publisher's online homework system, [MasteringPhysics](#). Each assignment will have a due date.
- **Grading summary:** Exams 1-3 (13% each), Final (22%), Labs (15%), Online homework (12%), Quizzes (12%).

### **Important dates to remember:**

Tuesday, Jan. 19	Classes begin
Friday, Jan. 22	Last day to register
Friday, Apr. 16	Last day to drop course with a grade of "W"
Monday, Mar. 15 - Friday, Mar. 19	Holiday (Spring Break)
<b>Monday, May 10, 7:45 am – 9:45 am</b>	<b>Final Exam</b>

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