Advanced Placement (AP) Physics B Course Syllabus

Instructor: Mr. Dove
Assistance: (7:15 to 8:00) Tuesdays & Thursdays in Rm217
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- **TEXT BOOK**
  - ESSENTIALS OF COLLEGE PHYSICS, Serway and Vuille, 1ST Edition
- **Required items:**
  - An array of pencils & pens
  - Scientific graphing calculator
  - Three ring binder (at LEAST 2-3 inches)
  - Graph paper (one small packet) Bring the first day.
  - STRONGLY RECOMMENDED: Computer access
  - **Also Strongly Recommended: The Princeton Review: Cracking the AP Physics B Exam,**

Course Description: This is a **college level course** designed to give the student an understanding of physical theory and principles. The subject matter includes the interaction of matter and energy, fluid mechanics, thermal physics, electricity, magnetism, and nuclear and atomic physics. The **AP Physics B** course designed for serious students with **exceptional** mathematics and problem-solving skills and with outstanding expository writing skills. It is designed as a senior year course for the student who is an independent learner, and students who intend to select careers in science, medicine, engineering, or the applied sciences. Those enrolled in AP Physics are expected to work at the very highest levels of their cognitive ability. The course primarily focuses on problem solving skills related to the AP Physics Exam.

OBJECTIVES AND GOALS OF THE COURSE: THE LEARNER WILL:

1. Read, understand and interpret physical information -- verbal, mathematical and graphical.
2. Describe and explain the sequence of steps in the analysis of a particular physical phenomenon or problem; that is,
   a. Describe the idealized model to be used in the analysis, including simplifying assumptions where necessary.
   b. State the principles or definitions that are applicable,
   c. Specify relevant limitations on applications of these principles
   d. Carry out and describe the steps of the analysis, verbally or mathematically and
   e. Interpret the results or conclusions, including discussion of particular cases of special interest.
3. Use basic mathematical reasoning---arithmetic, algebraic, geometric, trigonometric, or calculus, where appropriate--- in physical situation or problem.
4. Perform experiments and interpret the results of observations, including making an assessment of experimental uncertainties**.**

Laboratory Work: Laboratory work and experiments will be chosen to supplement the class work and to give you meaningful lab experiences in the areas being studied. Laboratory investigations are an integral part of the instruction. Each student is to maintain a business-like attitude and to follow all safety rules while in the laboratory. In Physics, the experiments may or may not be arranged in the order in which the topics appear on the syllabus. You are expected to participate in any and all laboratory experiences scheduled. You must make up any experiment or lab experience in which you are absent. Most of the labs are open-ended: You will be given a problem, objective or question and a list of equipment. You will then design your own procedure, data gathering, and data analysis. Results will be presented to the class and judgments made as to what conclusions can be drawn from the data, including possible experimental errors and how the experiment could be improved or expanded. All students are expected to submit an individual lab report which is turned in the day after concluding an activity. See —Formal Lab Format from my website. Please keep a

separate lab notebook. You are required to keep the reports in your lab notebook in case the college of choice requires evidence, artifacts or documentation prior to awarding college credit for physics.

GENERAL LABORATORY OBJECTIVES In completing lab work, you should be able to:

- Design experiments.
- Observe and measure real phenomena
- Determine uncertainties in measurement
- Organize, display and critically analyze data
- Draw inferences from observations and data
- Communicate results, including suggesting ways to improve experiments and propose questions for further study.

GENERAL CLASSROOM POLICIES

➢ **Attendance:** Successful individual performance requires mandatory **daily classroom attendance**. It is your responsibility to attend all lectures and laboratory sessions. Tardiness requires and excused pass form the proper staff member. Class cuts are unexcused and a grade of zero is entered for class assignments that day. All tardies will be recorded and appropriately dealt with. No EXCEPTIONS.

➢ **Homework Policy**: Each student is expected to do homework. Anytime that written homework is not specifically assigned, the student should review the work from that day. Homework quizzes will be given often and are graded daily. Unfortunately, there is not enough time to discuss **all** of them in class. Complete solutions to all homework problems are in the library to be available to any student who desires further explanation or additional help. No late homework is accepted, unless you were absent the day before. If you are caught copying homework from another student, you will receive a zero (see Cheating). No EXCEPTIONS. It is expected that we will use Web-Assign homework service this year.

➢ **Grading Policy**: Tests and quizzes serve three basic purposes: diagnostic, evaluative, and psychological. As diagnostic instruments, they reveal to both, teachers and students, the strengths and weaknesses of a students' learning. Thus, they not only pinpoint where remedial work and drill are needed, but also motivate students to overcome their deficiencies.

Student progress (grades) will be frequently posted in the classroom and they will be accessible on the Internet, via the class website. Grades will be individually protected by each student's ID number.

COURSEWORK

Tests (40%): There will be a major test at the end of each unit. Tests are fashioned much like the AP exam, in both multiple choice and free-response formats. In most cases, students will be allowed to use the AP reference tables and calculators. Students are expected to be fully prepared for tests. No retakes will be possible. If a student misses a test due to an excused absence, he/she must make arrangements with the instructor to take the exam within three school days of returning to school. If a student misses a test due to an unexcused absence, the test score will be recorded as a zero, No EXCEPTIONS.

Quizzes (20%): Quizzes may be announced or unannounced. Occasionally, quizzes will be open-book and/or open-note format. Quizzes may contain questions from the reading and/or lifted directly from the homework assignments. Quizzes may not be made up, no exceptions. The lowest quiz score will be dropped from each student's grade.

Laboratory Exercises (20%): Labs are a *very* important part of the course. Many labs are "hands-on" and will be conducted in small groups for the sake of data collection. However, each student is *individually* responsible for understanding each experiment, assisting in conducting the experiment and collecting/recording data, and preparing a complete lab report. All lab work will be recorded in a Lab Notebook. Each student will be responsible for submitting a unique, cogent report for each lab, and reports must be the result of individual effort, not copying or plagiarizing. If a student misses a lab due to an

excused absence, then he/she must make arrangements with the instructor to make it up within three school days.

Homework (10%): Completing *and understanding* homework and reading assignments are crucial to developing problem-solving skills, one of the cornerstones of success in the class. All homework assignments must be completed on time. Homework assignments will be due at the beginning of the period. If it is not turned in at that time, it will be considered late and therefore it will not be accepted. It will be graded on the basis is completeness, not accuracy. A complete homework assignment includes the student's name, date, period, assignment title, page number and problem numbers (if from the textbook). Additionally, all problems are written, illustrated with a neat diagram (when appropriate), all necessary steps are shown, and the answer to the problem is clearly highlighted. **If you are uncertain about a homework problem, you must demonstrate that you tried to solve it**. If a student is absent, he/she will have one school day to make up and turn in the missing assignment.

Participation (10%): Actively taking part in the class discussions is essential to the learning experience. Students will be called upon to answer questions, and to provide thoughts and opinions. In-class assignments (worksheets) will fall under this category as well. The participation grade will gain points for students who go above and beyond the normal class responsibilities. The participation grade will lose points for a variety of reasons, including: distracting or disrupting the class, wasting class time, arguing, unethical behaviors (plagiarism, cheating on tests, copying work from other students, etc.), coming to class unprepared. Excessive tardies and/or absences, excused or unexcused, will negatively affect the participation grade.

OTHER GENERAL POLICIES AND RULES

1. Students are to come to class prepared daily. This means you should have all materials, including assigned homework, class work, writing utensils, text and calculator etc.
   BE PRESENT, BE PROMPT, BE PREPARED, BEHAVE!
2. **Makeup work**: Students are expected to take responsibility for making up work that is missed due to illness, vacation, doctor appointments, etc. **NO UNEXCUSED LATE WORK will ever be** accepted…sorry. I will be glad to offer any assistance; however, you are responsible for getting all lecture notes announcements, etc. from other students.
3. **Making up Missed Tests:** "All exams missed during a marking period will be made up at **end of the week** you return". Morning makeup does not allow enough time to complete a single makeup test. All makeup tests will be different in format from the original given to the class in its original form. It is YOUR responsibility to make arrangements for transportation and cover at work to make up a test.
4. I expect an atmosphere conducive to learning. Misbehavior will result in time being spent in detention.
5. Attendance to class is **MANDATORY**. One of the primary responsibilities is to attend class each day. Each student is responsible for the material covered and discussed, and all announcements made in class each day. If you miss a day of class, it is recommended you get your notes, announcements, homework, from either the HWASST page or another student.
6. **CHEATING** and other forms of dishonesty:

CHEATING IS:

a. Any form of copying homework, before, during or after class time.

b. Any form of copying ANY work from another student, peer, human being or giving answers.

c. Copying of answers or material from another student's test, or giving answers to another student without permission from the instructor, and are both forms of cheating. Giving and receiving answers will be treated and punished equally.

d. Copying of another's work, (papers or other written work) without the expressed written permission of the author.

Those caught cheating will receive a grade of zero on the assignment and your parents will be contacted. If there is a second offense, the student will be dismissed from the course. **NO Exceptions**

7. NO food, drink or gum allowed without the expressed permission of the instructor.
8. All students are expected to be on time, on task and to show respect and courtesy and respect to all students, teachers, and other faculty members of Lodi High School.

Student Expectations In addition to following the regulations and policies mandated by Lodi High School, students are expected to exhibit a set of behaviors, which promote academic and social success in class. These behaviors include the following:

1. WORK HARD!
2. Make a concerted effort to do all course work and to obtain the teacher's assistance immediately if you encounter any difficulty.
3. Be in you seat, supplies out and ready to work when the bell rings.
4. Turn in all assignments when due.
5. Treat everyone with the utmost respect and dignity.
6. Remain in your seat until dismissed from class.
7. Respect and care for all laboratory and classroom equipment.
8. Return all equipment to its initial state before departing.
9. Obtain all notes and assignments from missed classes before the next class meeting from your classmates.
10. Exhibit a personal code of honor by taking responsibility for your work, performance, and understanding the course content.

Teacher Expectations **My requirements are simple**:

1. I expect 100% of your best effort. From me, you will receive the same. I will keep you informed of what will be occurring throughout each unit, what and when assignments will be due, and what will be expected of you.
2. You may expect me to hold you responsible for knowing procedures and requirements that have been either given to you in writing and/or discussed in class.
3. Regardless of how hard or easy you find Physics- I expect you to do your personal best! I expect the "A student" to ask questions as well as the "D student."

Please understand that these courses are for the entire year. You are making a commitment for the entire school year, regardless of clubs you decide to join, jobs you decide to get, offices to which you get elected, etc. Please get the telephone number of at least 3 other students by the end of the first week of class that you can contact in case of absences.

Dear Parent(s),

AP Physics is a very difficult, college-level course, which requires a lot of time and which many students feel like they will never understand, at first. This makes them want to drop the course. I am very understanding about their anxiety over grades, which is why we use an **AP scale** in assigning grades. Students need to live with Physics awhile before it makes sense. Though not everyone will end up with an **A**, everyone who takes this course and consistently applies themselves can obtain a reasonable understanding of physics and end up successful. It is of detriment to the program, as well as to each student, if they are allowed to drop when it starts to get difficult and they are afraid they won't get an A or B. I am asking you to support our decision to not allow students to drop once they have committed to the course and not write letters later on in the school year which will allow your son or daughter to drop this course. I consider it a privileged and pleasure to teach your child this year.

Thank you.
Mr. W. Dove

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Commitment Sheet for AP Physics B

I have read and understood the rules and grading policy, and agree to abide by them.

NAME (print clearly please) _____

Current GPA _____

E-mail address; _____

Your Home Phone # _____

Parent(s) or Guardian(s) names: _____

Parent(s) or Guardian(s) e-mail address: _____

Math Class you will be taking this year: _____

I have read and understand the class policies as outlined in the course syllabus for Mr. Dove's AP Physics B class.

Student's name (Print) _____ Student's signature _____ Date _____

Parent's name (Print) _____ Parent's signature _____ Date _____

PARENTS

Preferred contact method: _____

Daytime phone: _____ Evening phone: _____ E-mail address: _____