UNIVERSITY HIGH SCHOOL

A Nationally Recognized Exemplary School

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May 15, 2017

AP Physics Student:

AP Physics at UHS is a college level introductory physics course. In college, this course would be required for life science majors. The math level is restricted to Algebra and calculations deal with many quantities that are constant or uniform. Any applications involving calculus are handled conceptually, as opposed to mathematically. Physics examines the underlying scientific principles, laws, and mechanisms that attempt to explain the world around us and that are at the core of any branch of science. The subject matter is conceptual and VERY mathematical. The students find that the math they have been taught over the years is a tool capable of accomplishing a great deal. Classes at this level help prepare students for the rigors they will face in their undergraduate years ahead. As in any endeavor, motivation and effort are the most important ingredients leading to success.

Advanced Placement Physics 1 is a first year trigonometry based program that prepares students to take the Advanced Placement Physics 1 exam. The concepts presented are: kinematics; Newton's Laws of Motion; torque; rotational motion and angular momentum; gravitation and circular motion; linear momentum; work, energy, and power; conservation laws in classical mechanics; simple harmonic motion, waves and sound; and electrostatics and an introduction to electric circuits. Critical thinking and problem solving skills are a major component of all science classes. By developing an understanding of the role science plays in our daily lives, students will begin to develop a sense of the interrelationship of science, mathematics, technology and society. ***This course*** at University High School is unusual in the fact that it also prepares students to take the AP Physics 2 test in May. The additional concepts presented are: Fluid Mechanics; Thermodynamics and Gas Laws; Electricity & DC Circuits; Magnetism; Lenses, Mirrors and Optics; Modern Physics; and an Intro to Special Relativity.

The book required for this course is:

Title: College Physics, 9th Edition
Author: Serway and Vuille
Publisher: Brooks/Cole Cengage Learning
ISBN: 978-0840068750

Do not purchase the Enhanced version. (The book is available in the library but many students like to purchase the book in order to take notes/write in it. If you do plan on purchasing one, please note: ***I do not require you to look at it very often (if at all)…you can ask current students***)

To ensure that all of the topics are satisfactorily discussed in class before your exam in the beginning of May, it is necessary that you begin some of the review work during the summer prior to the start of school (see sheets attached to this letter). Before you return to class in September, please go to my AP Physics *Summer Canvas* site and enroll (**https://iusd.instructure.com/enroll/KGTTTY**) (Please note that you will be automatically enrolled in the "normal" AP Physics Canvas course in the fall…different from this one), after enrolling, you can always find the site again by logging in at https://iusd.instructure.com/login. Click on the Summer Assignment Folder (1st thing on the home page) and complete the items listed there (and on the attached assignment sheet). Some of the assignments require printing. If you do not have access to a printer, please contact me as soon as possible so that I can help you make other arrangements (please don't forget the public library also has printers).

Have a terrific summer and I look forward to meeting you all in the fall.

Respectfully,

Tim Smay
AP Physics Teacher
University High School, Irvine, CA

Here is the summer assignment for AP Physics. I know upon first glance, it seems like a lot, but if you pace yourself, you will get through it. Please do not wait until the last minute to do this! I want you to enjoy your summer, see lots of movies, and then come tell me about them, as I am a huge movie fan. Have a great summer and I will see you in Sept 🙂. The websites/QR codes are included for each assignment/video.

1. **Syllabus** - Please read and sign the course policies (have your parents sign too) and bring the signed copies the first day of class. Notice there are two places to sign. Please read what you are signing carefully as it will dictate the amount of copies I have to make throughout the year greatly. Bring the signatures to class on the first day.
   Course Policies - **http://bit.ly/2qlakXI**
2. **Gen Lab Instructions** - Print out and read the General Laboratory Instructions provided here as they will help you in some of the calculations that we will do in our labs. A lot of students don't do this and *then they have trouble* in the labs throughout the year so please make sure that you read through these (I promise it won't take very long)
   General Lab Instructions - **http://bit.ly/27StMtl**
3. **CH 1 Student Note Template** - Print out the Chapter 1 Template. Simply fill it out with the Power Point provided. (You can do this without reading Chapter 1) This is an example of what the notes look like in this class. I will typically have you print out a template like this at home, you will bring it to class, and then we will fill it in together as we go through the notes in class. For THIS particular template, just open the following Power Point presentation, VIEW IT AS A SLIDESHOW, and fill in the blanks.
   CH 1 Student Note Template - **http://bit.ly/2rke4HE**
4. **CH 1 Power Point** - Use this presentation to fill in the Student template notes (up above). Just make sure to view the Power Point AS A SLIDESHOW IN POWERPOINT…NOT GOOGLE SLIDES (otherwise the slides will not make sense to you). **To do this, save it onto your desktop (you can delete it later), then open it up with Power Point...if you open it from just this page, students have found that they have trouble viewing it.** Fill in the blanks on the template. This is basically a summary of Chapter 1. Chapter 1 is YOUR responsibility. So please make sure you read the chapter and fill out your template. If you have questions, please ask me through *Canvas*.
   CH 1 Power Point - **http://bit.ly/2qKKjTi**
5. Please **Read through Chapter 1**...(***this is optional***…do so only if the ideas from the CH 1 template did not make sense to you) it should all be a review of ideas from other classes you've taken. If you can't get a book until registration in the middle of August (from the school library), you will be okay...Chapter 1 is not very long. If you have happened to have chosen to buy an earlier edition of the book (some people like to have their own copy), that is okay. Its CH 1 covers the same material.
6. **CH 1 Bookwork WS #1** - Do the CH 1 Bookwork WS #1 Worksheet and have it done for the first day of class. This is generally how the HW will look. Go ahead and print it out, as is, and do the work underneath the problems. The numbers that are in parentheses next to the problems are the answers to the problems. Hopefully, that will help you figure out whether or not you are solving the problem correctly.
   CH 1 Bookwork WS #1 - **http://bit.ly/1NMVod0**
7. **CH 3 Student Note Template** – Print out the Chapter 3 Notes Template. You will fill part of it out with the Video Lessons #s 1 and 3 (see below). We will pick up the pieces of CH 3 when I meet you in August.
   CH 3 Student Note Template - **http://bit.ly/2qFztep**
8. **Video Lesson #1: Adding Vectors Graphically** - View the lesson/video on You Tube. (It is about 20 minutes long → about 10 minutes lecture (fill out the template (#7)...about 10 minutes explaining the HW - Adding Vectors Graphically (#9) so have *it* handy)
   Video – Adding Vectors Graphically - **http://bit.ly/1fpQ4FD**
9. **Adding Vectors Graphically WS** - Use graph paper and protractors to complete the Adding Vectors Graphically WS. Bring this the first day of class.
   Adding Vectors Graphically HW - **http://bit.ly/1TyWrzr**
10. **Video Lesson #2: Adding Vectors with Components** - View the lesson/video on You Tube. Very similarly to lesson #1, it will give you some notes, but it will also explain the HW – Adding Vectors with Components (#11) so have it handy.
    Video – Adding Vectors with Components - **http://bit.ly/1f6NAkD**
11. **Adding Vectors with Components WS** – Complete this WS and bring it the first day of class. Make sure to do each problem with the tables as shown in the examples from the video.
    WS – Adding Vectors with Components - **http://bit.ly/1U8CvNL**

12. **Video Lesson #3: Components of a Vector: The Problems** - View the lesson/video on You Tube. This contains some notes that you *fill out with the CH 3 Notes Template* (see #7 above). Then you will work on CH 3 Bookwork WS #1 and the WS – CJ Chosen Vector Problems (see below)
    Video – Components of a Vector: The Problems - **http://bit.ly/1f6ZTNN**
13. **CH 3 Bookwork WS #1** - Do the CH 3 Bookwork WS #1 Worksheet and have it done for the first day of class. Go ahead and print it out, as is, and do the work underneath the problems.
    CH 3 Bookwork WS #1 - **http://bit.ly/1ONksLA**
14. **WS – CJ Chosen Vector Problems** - Do the WS – CJ Chosen Vector Problems and have it done for the first day of class. Go ahead and print it out, as is, and do the work underneath the problems.
    WS – CJ Chosen Vector Problems - **http://bit.ly/1TKOzZY**
15. **OPTIONAL - LAB – Vectors & PhET Applet WebQuest (*OPTIONAL* but highly recommended if you are worried about the quiz)** – Open up this lab and go to the web site provided. Do the vector exercises provided on the web site and it will provide more practice before your quiz. This will not be collected but like I said, if you would like more practice with vectors (especially depending on your math background), this is a good place to look.
    LAB – Vectors & PhET Applet WebQuest - **http://bit.ly/22panwh**
16. **Study** all of the CH 1 and Vector HW because you will take a test on it through *Canvas* (before you come and see me the first day…welcome to your first AP Physics test!!! It will be available July 5th). Make sure you register on Canvas (using your **real name** and **email**) using the join code given on the attached letter. **Take the quiz**!!! on *Canvas (click on quizzes on left side of screen)*. **ONCE YOU START TAKING A QUIZ ON *CANVAS*, YOU NEED TO FINISH IT IN THE SAME SITTING SO MAKE SURE YOU HAVE 50 MINUTES TO SPARE!!!**
17. **CH 2 Student Note Template** – Print out the Chapter 2 Notes Template. You will fill part of it out with the Video Lesson #4 (see below). We will pick up the pieces of CH 2 when I meet you in Sept. I promise you that I actually DO teach you…you will not just watch videos all year.
    CH 2 Student Note Template - **http://bit.ly/2rn6POU**
18. **Video Lesson #4: Linear Motion Day 1** - View the lesson/video on You Tube. This contains some notes that you *fill out on the CH 2 Notes Template* (see #16 above). Then you will work on CH 2 Bookwork WS #1 & 2 Combo (see below)
    Video – Linear Motion Day 1 - **http://bit.ly/1m6Ldgg**
19. **CH 2 Bookwork WS #1 & 2 Combo** - Do the WS – CH2 BW WS #1 & 2 Combo and have it done for the first day of class. Go ahead and print it out, as is, and do the work underneath the problems.
    WS – CH2 BW WS #1 & 2 Combo - **http://bit.ly/1YZC9xn**
20. **Optional** (but highly appreciated): If you could bring in 1 packet or box of **black EXPO** brand dry erase, thick blackboard markers, I would greatly appreciate it. As you will see, I write on the board **A LOT** and I want to make sure that everybody in the class can see. It is as pain when a pen runs out and I have to hunt around for another pen so that students in the back can see what I'm writing. If everybody could bring in a packet of black pens, we would never have that problem (and nobody would be spending a fortune)...THANK YOU in advance.

So the summary of what is ACTUALLY DUE first day of class is (this is what I will collect!!!):

- You must have turned in the *Canvas* Quiz/Test on *Canvas* (**remember YOU MUST take it all in 1 sitting**)
- Signed Syllabus
- CH 1 BW WS #1
- Adding Vectors Graphically WS (make sure to use ***graph paper*** and ***protractor***)
- Adding Vectors with Components WS
- CH 3 BW WS #1
- WS CJ Chosen Vector Problems WS
- CH2 BW WS #1 & 2 Combo WS