

# CBHS – AP Physics 2 – 2018-19

Welcome to AP Physics 2! As most of you know, AP Physics 1 and 2 were created by College Board to replace AP Physics B. There are many reasons for this change, but chief among them is the growing sentiment that physics is meant to be inquiry-based learning – where students discover physical laws of nature through experimentation and build conceptual models of those laws through small group and class discussion. In this manner, this course will be markedly different from AP Physics B, and from Honors Physics as well. You will need to ask questions, brainstorm solutions, create experiments to test your ideas, analyze the lab results, confirm or revise your answers, and report those findings to the rest of the class – your peers. In other words, you will have to actually use the scientific method. You will find that while knowing and using formulas will always be an important part of physics, that this class will stress your conceptual foundation.

I have attended two AP Summer Institutes in the last four summers to ensure that I am up to date on all the new changes. What I can tell you is that we are as prepared here at Cypress Bay as anyone in the country. One very important lesson that I took away from the APSIs is that the new test is **hard!** Please do not take this class lightly. It is not Honors Physics 2. Despite what you may have heard, AP Physics is NOT easier than Honors Physics, and anyone taking this class under that misapprehension is seriously deluded. It is an AP class, and though I hope it will be enjoyable, that is not my ultimate goal. The national pass rate for AP Physics 2 is about 61%, one of the lowest of any subject. Last year at Cypress Bay it was 84%. This was accomplished through hard work, not natural talent. If you don't think that you are up to the challenge of this difficult course, I urge you to reconsider taking it. I will work as hard as I can to help you learn the material in a thoughtful and engaging way. I expect the same commitment from my students. Seniors who may succumb to Senioritis and are looking for an easy class – this is not it. Juniors taking 7 AP, AICE and Dual-Enrollment classes – maybe 6 is enough. If you struggled with Honors Physics – I hear that AP Chem has availability (I kid because I love!). Make sure that this is what you truly want, and then let's do this! Together, we will derive nearly every formula we use. We will perform about 15 experiments, and your lab notebook will be breathtakingly beautiful. We're building a very strong program, and I'm very excited to have you aboard. Let's have a great year!

Mr. Rose

## Website

I will post assignments and other course information on our class website. The website is <http://rosephysics.com/AP2/AP2.htm>

## Grading Policy

**Tests (50%)** – Tests will be administered at the end of chapter. Questions will come from previous AP exams and will be Multiple-Choice and Free-Response. There will be approximately 3 – 4 tests per quarter. The tests are formidable. **Seriously.**

**Labs (30%)** – Labs will take several days of class time to complete. They will begin with observation of a physical phenomenon, followed by a class discussion. Labs will be *student designed* and will focus on the isolation and identification of physical variables. The actual experiment will take time to complete. The data should be analyzed to determine their validity, and the written report should emphasize graphical analysis of the data. The report should conclude with a detailed error analysis, emphasizing the differences between theoretical and experimental results. The last day of the lab will center on sharing and discussing of data and results. Lab reports will generally be due a couple of days after the data is collected in class. While the data is collected and shared by a lab group, **each student** is responsible for recording data, graphing and answering questions in a lab journal. It is entirely possible, even probable, for students within the same lab group to earn different grades on a lab. Each grade is based on the quality of each student's work. There will be approximately 4 – 5 labs per quarter and will account for approximately 25% of class time.

**Homework (20%)** – The majority of homework questions will be drawn from supplementary worksheets. The single best indicator of how well a student will do in AP Physics is the quality of his or her homework. It will be very difficult to succeed in this class without doing an excellent job on the homework assignments. It will be very apparent if you copied your HW from the internet or someone else, because you will fail the tests miserably. Simple.

## Textbook

We will be using College Physics 11<sup>th</sup> Edition, by Serway and Faughn.

## AP Test

This year the test is on Friday, May 10, 2019.

## Content

This is a table with the units and chapters we will cover in this course.

<b>AP Physics 2</b>	
<b>Unit</b>	<b>Chapters</b>
<b>Fluids</b>	Ch 9 – Solids and Fluids
<b>Thermodynamics</b>	Ch 10 – Thermal Physics Ch 12 – The Laws of Thermodynamics
<b>Optics</b>	Ch 22 – Reflection and Refraction of Light Ch 23 – Mirrors and Lenses Ch 24 – Wave Optics
<b>Electrostatics</b>	Ch 15 – Electric Forces and Fields Ch 16 – Electric Energy and Capacitance
<b>Circuits</b>	Ch 17 – Current and Resistance Ch 18 – DC Circuits
<b>Magnetism and Induction</b>	Ch 19 – Magnetism Ch 20 – Induced Voltages and Inductance
<b>Modern Physics</b>	Ch 27 – Quantum Physics Ch 28 – Atomic Physics Ch 29 – Nuclear Physics

## Make-up Work

Students are responsible for finding out the assignments missed due to excused absences. The schedule for the entire quarter, along with assignment due dates, will be posted on the website. It is possible to look up missed assignments from home. In accordance with SBBC policy, students will not be able to makeup assignments, and they will receive a zero, for unexcused absences. A student who is absent (excused) on a lab day will need to make time (during lunch or afterschool) to collect data and will have to complete the lab write-up. A student who misses a test will receive a zero, even if it is excused. However, there will be one makeup test at the end of each quarter. Please note that the make-up exam will be entirely different from the regular exam. It will be VERY DIFFICULT to keep up with this class if you have multiple absences.

## Late Work

Be aware of due dates and take responsibility for your work. Late work is not accepted.

## Cheating

Cheating of any type will not be tolerated. If a college professor catches you cheating, he or she can have you kicked out of school. **Unfortunately**, I do not have that power. However, any student caught cheating on an assignment in my class will receive a zero for that assignment. Additionally, I will notify their parents, the appropriate Assistant Principal and any college to which I have recommended that student – which may lead to further action. If I did not write your letter of recommendation, then I will notify the teachers who did. If you cannot handle the course load that you have requested, I urge you to reconsider taking this course. Cheating is NOT an acceptable means with which to deal with being unprepared. If you're not ready, take responsibility for the poor grade and try harder next time. If you do not understand an assignment, ask for help and I will do everything I can to help you. Cheaters, however, are unworthy of my extra time or effort.

**Emergency Contact Information**

Student Name \_\_\_\_\_

Mother's/Guardian's Name \_\_\_\_\_

Home Number \_\_\_\_\_ Work Number \_\_\_\_\_

Email \_\_\_\_\_

Father's/Guardian's Name \_\_\_\_\_

Home Number \_\_\_\_\_ Work Number \_\_\_\_\_

Email \_\_\_\_\_

**Signatures**

I have read the Welcome Letter for AP Physics 2 and I will abide by these rules and guidelines while in Physics class.

\_\_\_\_\_  
(Student Signature) (Date)

I have read the Welcome Letter for AP Physics 2 and I understand what is expected of my child in Physics class. The contact information above is accurate.

\_\_\_\_\_  
(Parent/Guardian Signature) (Date)