

# CBHS – AP Physics 2 – 2024-25

Welcome to AP Physics 2! You survived AP Physics 1, and you're back for more! Good for you! As you know by now, I am not afraid of a little hard work. I hope you're not either! This class adheres to the truest principles of science. Physics education is meant to be inquiry-based – where students discover physical laws of nature through experimentation and build conceptual models of those laws through small group and class discussion. 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 use the scientific method. You'll find that while knowing and using formulas is an important part of physics, this class will stress your conceptual foundation.

I have attended multiple AP Summer Institutes, and I am an AP Reader – all to ensure that I am up to date on any new changes. What I can tell you is that we are as prepared here at Cypress Bay as anyone in the country. But please do not take this class lightly. It is an AP class, and though I hope it will be enjoyable, that is not my ultimate goal. The state and national pass rates for AP Physics 2 are about 70%, which is not bad. Last year at Cypress Bay it was 96%. Even more impressive is that Cypress Bay accounted for 14% of all the 5s for AP Physics 2 in the state of Florida! That includes all 1500+ high schools – public, private, magnet and charter. This tremendous achievement has been 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 AP Physics 1 – 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 have built a very strong physics program here at Cypress Bay, 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 each 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 (25%)** – 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. Lab reports will generally be due a couple of days after the data is collected in class. The day the lab is due will begin with sharing and discussing of data and results. 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 (25%)** – 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 scheduled on Tuesday May 13, 2025. This is a pretty important day.

## 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>Thermodynamics</b>	Ch 10 – Thermal Physics Ch 11 – Energy in Thermal Processes Ch 12 – The Laws of Thermodynamics
<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>Geometric Optics</b>	Ch 22 – Reflection and Refraction of Light Ch 23 – Mirrors and Lenses
<b>Waves, Sound and Physical Optics</b>	Ch 13 – Vibrations and Waves Ch 14 – Sound Ch 24 – Wave Optics
<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. Students are usually given a week to do the lab writeup. Labs are due by the due date, not on the due date. Students can turn labs in early, but not late. **If a student is absent on the due date, his/her lab is still required to be turned in on that day.** It can be given it to a lab partner, neighbor, sibling or good friend to turn in. Being absent on the due date is not a valid excuse for the lab to be turned in after the due date. 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)