CBHS – AP Physics C – 2017-18

Welcome to AP Physics C! This year should prove to be both educational and enjoyable, and I am delighted that you have decided to challenge yourself by taking the hardest class offered here at the Bay! Taking Physics C is like taking two normal AP courses, literally. (No, you don't get two AP credits. Sorry!) The course is divided into two parts: Mechanics and Electricity & Magnetism (E&M). There will be a separate AP exam for each part. The course is designed to be equivalent to two semesters of college-level physics. Fewer than 1000 students in the entire state of Florida took the E&M part of this course last year. Unfortunately, fewer than half passed the AP test. Did I mention that it would be hard? This fact is not meant to dissuade you from taking this class. Rather, it serves to highlight the reality that you are in a very select group. Our ultimate goal is to place you in an even more select group – students who have passed the AP Physics C exams! Through our combined efforts, hard work and talents, I sincerely believe that we can reach that goal.

For the last several years, Cypress Bay has accounted for approximately 15 – 25% of the Level 5s in the entire state of Florida! That fact is, simultaneously, awesome for us, and very sad for the state! There are only a handful of Physics programs in the state that are better than ours – UF, UM, UCF, USF, FIU, FAU, and, maybe, FSU. (Go Gators!)

However, statistics and passing scores are not the true measure of this class. Together, we will derive nearly every formula we use. We will perform about 20 experiments, and your lab notebook will become a living work of art. We compete in national Physics competitions, and we will represent Cypress Bay very well. 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, solutions and course information on our class website. The website is

http://rosephysics.com/APC/APC.htm

Grading Policy

Tests (30%) – Tests will be administered at the end of each Unit. Tests will cover approximately 2 to 4 Chapters from text. Questions will come from the text, previous AP exams, and labs. Tests will be entirely Multiple-Choice. There will be approximately 3 tests per quarter.

Quizzes (30%) – Quizzes will be given after every chapter and will be only 1 question, albeit with several parts. Quizzes will be done in 15 minutes of class. Questions will come from the free-response portion of previous AP exams. The quizzes are very hard. **Seriously**.

Labs (20%) – Most labs will be open-ended experiments. Each lab group will perform an experiment that allows for the isolation and identification of physical variables. The data should be analyzed to determine the validity of the results, 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 few 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 6 – 8 labs per quarter.

Homework (20%) – The majority of homework questions will be drawn from the textbook and supplementary worksheets. I will post the answers at the beginning of the chapter because I want you to check that your solutions are correct. However, that means that your homework should be complete and accurate before you turn it in. Homework solutions will be posted ASAP after the homework has been collected. 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.

Textbook

We will be using Physics for Scientists and Engineers, 8th Edition, by Serway and Jewett.

AP Test

This year the test is on Monday, May 14, 2018. This date is more important than any other.

Content

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

1st Semester: Newtonian Mechanics	
Unit	**Chapters**
Kinematics	Ch 1 – Physics and Measurement Ch 2 – Motion in One Dimension Ch 3 – Vectors Ch 4 – Motion in Two Dimensions
Newton's Laws of Motion	Ch 5 – The Laws of Motion Ch 6 – Circular Motion and Other Applications of Newton's Laws
Work, Energy, and Power	Ch 7 – Energy of a System Ch 8 – Conservation of Energy
Systems and Linear Momentum	Ch 9 – Linear Momentum and Collisions
Circular Motion and Rotation	Ch 10 – Rotation of a Rigid Object Ch 11 – Angular Momentum Ch 12 – Static Equilibrium and Elasticity
Oscillations and Gravitation	Ch 13 – Universal Gravitation Ch 15 – Oscillatory Motion

2nd Semester: Electricity and Magnetism	
Unit	**Chapters**
Electrostatics	Ch 23 – Electric Fields Ch 24 – Gauss' Law Ch 25 – Electric Potential
Capacitors and Dialectrics	Ch 26 – Capacitance and Dielectrics
Electric Circuits	Ch 27 – Current and Resistance Ch 28 – Direct Current Circuits
Magnetic Fields	Ch 29 –Magnetic Fields Ch 30 – Sources of the Magnetic Field
Electromagnetism	Ch 31 – Faraday's Law Ch 32 – Inductance Ch 34 – Electromagnetic Waves

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 quiz will receive a zero, even if it is excused. However, there will be one makeup quiz at the end of each quarter. The makeup grade will replace the zero for the missed quiz. A student who is absent on an exam day will be given a make-up exam. 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. Any student caught cheating on an assignment 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, personally, 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 sincerely ask that you consider another 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 don't get an assignment, I will do everything I can to ensure that you learn the material. Cheaters, however, are unworthy of my 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 C 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 C and I understand what is expected of my child in Physics class. The contact information above is accurate.

_____ _____

(Parent/Guardian Signature) (Date)