Welcome back to the Advanced Physics Lab. We will start off with distance learning again. Hopefully, we can return safely to school in person before the end of the year.

I. Advanced Physics C: Mechanics and Electromagnetism: We will continue our mission is to deepen your understanding of physics. All our physics content this year can be expressed as a few equations. You won’t need to memorize much but you will need to continue to develop advanced problem-solving skills. Physics is a cumulative subject and doesn’t lend itself to short term cramming. In the fall semester we focused on Mechanics: motion, force, momentum, energy, rotation and Newtonian gravity. This semester we will take up Electromagnetism including circuits and Maxwell’s Equations. This class becomes more abstract as we progress through E&M. We will revisit Mechanics in the Spring to prepare for the AP test in May.

II. In the Lab: We will continue to do our distance learning labs. Watch for pick-up times to get your equipment from school.

III. Logistics and tips for success: You will need to check the Calendar page daily on the website. The website saxbyphysics.com. All work will continue to be submitted via Teams. Use the pdf format, not jpeg images or Word docs. Make sure to double check your pdfs to make sure they have everything you intend. No credit for late work.

A. What you will need every day for our Teams meetings:
   1. **Calculator**: problem solving is not a spectator sport. Get the same one you need for math: TI-80?
   2. **Whiteboard with markers** which I gave you in the Starter Kit.
   3. **Colored** pens (gel markers work best) for notes and diagrams.
   4. **Correction tape**: we all make mistakes!
   5. **Protractor and ruler**. Get a simple, large (at least 4.5” across) clear, one-piece protractor like this:

B. **Discussion/ Lecture**: Be an active participant in class discussions. Speak up if you don’t “get it,” or if you think your teacher is wrong (a rare but satisfying occurrence.) **Be compassionate** with other students who are experiencing difficulty. You could be next!

C. **Note-taking**: You don’t need to write down everything but you do need to keep your PJ up to date.

D. **Daily Schedule**: Teams meetings every day except Wednesday.
E. **Daily Homework**: In addition to the custom homework on the website, homework problems will be taken from *Fundamentals of Physics*, 10th Ed by Halliday, Resnick and Walker. This text has some of the best homework problems available in print. See *Homework*. You will turn in a weekly homework packet.

F. **Tests**: We will continue to do weekly quizzes 2nd semester. We are developing the skill of turning in work on time: no credit for late work. You will be able to drop one quiz or HWPK by the end of the semester. I will do it for you if it will improve your letter grade.

G. **Grading**: Your overall grade is simply based on points, according to the standard 10-point scale. Your grade for this term will be based on HWPKs, Quizzes and a Final. I try to be as fair to students as possible. **All students have the same opportunities and deadlines.** I don’t do individual extra credit, or selective deadline enforcement. If we are able to return to in-person learning at school all students will have additional lab/project opportunities. Your transcript will show both AP Physics C: Mechanics, and AP Physics C: Electromagnetism for both semesters. **The semester grade for both courses is the same because they are integrated.** This is a good thing if you are doing well, and a hazard if you are not, so stay on top of things.

H. **Integrity**: For labs your own work is the best work for you. Even if your own “bad” data is better for you than someone else’s “good” data. Cheating on quizzes undermines your self-confidence and is not fair to others.

I. **Extra help**: You are welcome to attend office hours. This semester we will experiment with partner learning. Just because physics is a “hard science” doesn’t mean it can’t be a social science too!

J. **Web based resources**: Course materials will be available online on the Calendar page on Teams. If you can’t get through on Teams use the calendar on saxbyphysics.com. Check the calendar daily to find out what we did each day and to get homework assignments. You will need access to a printer to print the many custom assignments. If you have printer issues you can hand-copy assignments. The best way to contact me electronically is through email: psaxby@lwsd.org.

K. **Late work**: Late work doesn’t work. The course is fast paced and every day counts. If you miss turning in an assignment you need to focus on the current material and not get farther behind doing old work. HW solutions are discussed and sometimes posted soon after they are due, making late HW obsolete.

IV. **The AP Physics C Mechanics and E&M exam**: This course is organized around the expectation that you will take the standardized AP Physics C Mechanics and E&M test on May 3 allowing you the possibility to get college credit, and the chance to see how you stack up in an international setting.

V. **In conclusion**: welcome! **This course is challenging and a fair amount of work**, and I hope it will be one of the high points of your senior year. Many of you have been working hard. Keep up your hard work this semester and it will pay off in future studies. Seniors who take a dive 2nd semester often struggle getting back on track their freshman year of college. This Covid-19 year has its own unique challenges, but we need to make the best of it. My goal is to help you get the best possible preparation for future college work. Let’s make it happen!

Sincerely,

Mr. Peter Saxby