

Welcome to AP Physics C: Mechanics! This class is specifically designed to cover the material that would be covered in the first semester of a first year calculus-based physics class. As such, this class is specifically geared towards students who are considering majoring in engineering, mathematics, or the physical sciences, as most of these students will be required to take calculus-based physics in college. Even if a student's college does not accept AP credit for this class or allow her or him to pass out of freshman physics, gaining experience with calculus and physics together will be invaluable to understanding physics at the university level.

This year, we'll be getting at the heart of classical physics--we'll be using basic calculus to more fully understand the nature of physical motion in our world, using our strongest available mathematical skills to analyze, interpret, and predict physical phenomena. As mentioned above, we'll cover the content that is typical of a first semester of calculus-based freshman physics. Keep in mind that this class combines two of the subjects that are often considered very difficult by high school students, and we will be solving a LOT of problems both in and outside of class.

In order to ease the transition into the class and to make sure that everyone has a decent chunk of the prerequisite physics knowledge to begin the class, I've decided to assign two summer assignments.

For the first I've provided some sections from an AP Physics textbook that covers some basic knowledge that everyone will need to have a good command of. We'll be covering the basics of the necessary calculus in the first two weeks of class, so I won't be requiring any calculus problems to be done over the summer. The problems section also includes some practice problems including graphs that should be a review from Physics.

The second summer assignment is to participate in a self-paced online "onramp" to AP Physics. The course is designed to help students hone their skills in applying math tools to physics problems. Topics covered are Kinematics, Newton's laws and Laws of Conservation.

One last note. I'm going to assume that the majority of you fall into one of two categories as far as school work is concerned. Either you try to get all of your work done at the beginning so you can enjoy free time or you wait until the very end to get it all done (if you do a little bit at a time spread out over the months off, I applaud you). To all my procrastinators out there: procrastinate in moderation. Waiting until the last minute to do any assignment is foolish. You will hear this again throughout the year, but I'll start saying it now: complex physics problems sometimes take time to understand. You may try something five times, get it wrong five times, get frustrated and give up for the day. Then, you come back a day or two later and figure it out right away. Spending time away from directly working on a problem can be helpful at times (provided you've already struggled with it for a little bit). The point is this: if you don't allow yourself that break time, you're going to come into the class frustrated before it even starts. Give yourself time to walk away from this assignment and come back at a later date.

Feel free to contact me over the summer if needed at scott.key@lcps.org. I am not available on a specific schedule but will try to get back with you on a reasonable time schedule.

Scott Key

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