AP Physics Gets a Makeover

As many of you know, the AP program—in collaboration with AP teachers and college/university faculty (see Acknowledgements)—is replacing the current AP Physics B course with two new courses: Algebra-based AP Physics 1 and 2. The courses will be in effect this upcoming 2014-2015 school year, as will their respective exams. Each Physics AP course will have its own exam. The calculus-based AP Physics C will remain unchanged.

As noted on the College Board website, the reason behind the change comes from a study led by the National Research Council (NRC), which concluded that the AP Physics B course was too broad, and that by separating it into two full-year courses, students will have the time to deepen their understanding of the subject through “student-centered, inquiry-based instructional practices.” The curriculum framework, and the extra time, will allow teachers to cover, in greater depth, the necessary concepts and skills needed by their students to earn credit for an introductory algebra-based college physics course.

Overview

AP Physics 1 will cover Newtonian mechanics (including rotational dynamics and angular momentum which were not covered in AP Physics B), work, energy, and power, mechanical waves and sound; it will also partially cover electric circuits. Unlike AP Physics B, this course does not require completion of a prior physics course or coursework. At this time, students should have already completed geometry and be concurrently taking Algebra II or a comparable course. AP Physics 2 will cover fluid mechanics, thermodynamics, electricity, magnetism, optics, atomic and nuclear physics. At this time, students should have already taken AP Physics 1 or a similar introductory course. They should have also taken, or be concurrently taking, precalculus or comparable course. AP Physics 1 and 2 are equivalent to two semesters of college-level algebra-based physics. See a side-by-side comparison of AP Physics B to AP Physics 1 and 2.

What’s the Next Step for AP Physics Teachers?

AP teachers will need to submit a new or revised syllabus to AP Course Audit where it will be reviewed by college faculty. The AP course audit will begin this March 2014. During this process, teachers have two options: (1) Design and submit a syllabus aligned with the new curricular requirements using the resources available on the AP Course Audit website, or (2) adopt and submit one of the Annotated Sample Syllabi.

Teachers should also download and review the Course and Exam Description, which includes 28 sample questions for each exam.

AP also recommends that teachers seek Professional Development, which includes AP and Pre-AP workshops and summer institutes, starting June 2014, that will focus on the new curriculum. A four day workshop (Aug 4-7) on the new courses will be held at the Southern California AP Institute at Palos Verde High School. It will be led by Connie Wells, a key player in the redesign and development of the new courses. (http://scalifap.org/) Cost $725

Final Thoughts…

After reading through various online discussion boards and high school articles, the change is expected to be a relief to incoming juniors, but of course, not everyone seems to be in agreement. For many successful AP Physics programs, the changes could jeopardize what teachers have already improved and perfected. But it can also be an opportunity to expand and explore the material in detail, which should be exciting. Also, it could alter what seems to be a unique experience for most high school students, at least those who “dare” take what may be one of the more difficult of AP courses. What’s your take on how these changes will impact current high school teachers and future students? What are the pros and cons? And don’t forget to join the online forum, AP Physics Teacher Community, to be a part of the ongoing dialogue.