

An Unedited Review of Applied Physics 14 by an Independent Student Organization

Applied Physics 14 has finished its first year, and the critics are raving. Designed as an alternative to the old Physics 13, it is a rigorous course in beginning college physics for students who have had physics before and possess some degree of mathematical sophistication. The course depends heavily on lab work as a means of learning, rather than on lectures, written problems using grind-'em-out formulas and monkey-see-monkey-do "labs." Projects are emphasized rather than lectures and exams. But just because there are no lecture and exams doesn't mean there are no grades; the labs were the scene of constant oral grilling and grades were based on how much and how well you did in both the lab work and the questioning, as well as papers.

The course was the result of a concern over the drop in the level of interest in science at Harvard. Flexibility in material covered, small student-teacher ratio, and immediate returns to intellectual investment were key points in the different learning and teaching strategies the course employed. Four professors (Turnbull, Jones, Abernathy and Pershan) and six teaching fellows taught a limited enrollment of about 30, in four sections, each section investigating a particular area: thermodynamics, optics and waves, mechanics and electricity and magnetism were the section offerings. As the year progressed, students moved from one section to another. Individual interests could be pursued, and done in depth.

Perhaps the best thing about the course was the personal element: with the teachers so enthusiastic and the right set-up for them to do something about it; a notable amount of intellectual curiosity and endeavor almost automatically followed. Besides the all-important labs, there was collateral reading and the students did it, even though it took as much as ten hours a week. Evidently the course succeeded in its primary objective, which was to seize the attention and interest of the students who would be unhappy in a traditional physics course, with its emphasis on abstract formulation rather than concrete demonstration and achievement. However, the students were taken not only by the course but also by the teachers; people who weren't connected with the course tended to drop in.