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A Flipped Modular Skills-Based Introductory Electronics Course

ERIC AYARS, California State University, Chico

After enjoying good results with a flipped introductory physics course, I decided to flip our department's sophomore-level "Electronics for Scientists" course and associated lab. The course redesign got out of control, though, and the course ended up a collection of interdependent modules through which students could progress at their own pace, along multiple paths of their own choosing. This redesign has shown some distinct advantages and disadvantages. Better students are not constrained by the speed at which lectures progress through the material, and struggling students can pare the modules down to a manageable subset of the total class material. Students throughout the class can pick interesting personal goals and immediately see what modules they need to learn to reach those goals. On the other hand, this redesign is not in any sense a time- or labor-saving course change! Overall, the redesign has been a positive change. Student response has been entirely positive, and the quality of student work and overall understanding has generally improved.