Teaching Physics for the Life Sciences in a Modified Workshop Format
Catrina Hamilton-Drager, Dickinson College

Class Structure - History

- Prior to 2007, this class was taught in a Workshop format, meeting MWF from 9:30-11:30 AM, in our Workshop classroom with a capacity of 24 students.
- Homework was assigned each Wednesday and was due a week later. Quizzes were given every Friday, and near the end of the semester, students were expected to participate in a group project of their choice that culminated in a group presentation and report.
- The text used was, “College Physics” by Giambattista, Richardson & Richardson.
- Individual activities were crafted for each meeting period and no particular manual or activity guide was used.
- After the departure of the PLS instructor in 2007, the course was revived in 2009 due to pressures from other departments on campus whose majors depended on the course offering.
- We attempted to maintain the Workshop format, hosting 2 sections, meeting MWF from 8:30-10:30 AM and again from 10:30-12:30, in our Workshop classroom with a capacity of 24 students, for a total of 48 students.
- We adopted “College Physics” by Serway and Vuille and used the “Real Time Physics” Modules (RTP) 1 & 2 by Sokoloff, Laws, and Thornton.
- We maintained the quizzes and the homework structure, but dropped the projects at the end of the semester in favor of Problem Solving Sessions.

The Move to a New Structure

- Teaching Workshop-style is FTE intensive, and in both 2010 and 2011, we were only able to offer 1 section of PLS.
- By August 2012, we had a large backlog of students from other departments needing the course. The Administration asked us if there was a way to increase our capacity.
- We opted to keep the MWF 2-hour timeslot, but made M/W 10:30-12:30 a “lecture,” and Friday 10:30-12:30 a lab.
- By increasing our capacity in lecture to 48 and adding a lab section on Thursday evening from 7:00-9:00 PM, we were able to accommodate more students without using a full FTE.

Classroom Setup

- This classroom seats ~ 60 students, although our maximum is always 48.
- Seating is “tiered” such that students can turn around and work with those behind them – great for “think-pair-share” and other in-class activities.
- We have utilized several Interactive Lecture Demonstrations, developed by Sokoloff and Thornton to break up the lecture and elicit misconceptions and foster interactive learning.

Lab Setup

- Lab is taught in the Workshop classroom.
- Groups of 4 max. work though sections of labs from either the RTP Modules or individual activities drafted by the professor.
- Lab HWs are assigned and collected at the start of the following class to enhance understanding.