Teaching Statement

Experience

I have had the opportunity to teach differential calculus with applications to business and social science (MATH 104) at the University of British Columbia. Specifically, I taught MATH 104 in the fall terms of 2011 and 2013. My duties included lecturing, designing homework assignments, administering and grading examinations, holding office hours, and maintaining a webpage for the students in my section. Components of this course were delivered via an online tool called WebWork and I am familiar with integrating online components with classroom teaching. Furthermore, I have extensive experience as a departmental teaching assistant and private tutor. Please refer to my CV for a complete list of my teaching experiences.

Philosophy

In my mind, the content of a mathematics course is structured along two main axes: technicality and applicability. I tend to structure my lectures and learning materials for first-year business calculus to emphasize the applications of the mathematics first. Many students enter university with a limited understanding of basic mathematical concepts. Although I appreciate the importance of technical precision in mathematics, I find that many first and second-year undergraduate students who do not plan to specialize in mathematics may feel alienated by an extremely rigourous and technical approach. I think students gain a greater appreciation for the subject when they learn the applications of a concept and master the basics before delving into the fine details. I believe my responsibility as an instructor of introductory calculus is to foster an interest and appreciation of mathematics. To that end, I teach from a more applied perspective, trying to emphasize the applications and usefulness of a particular concept, rather than the mathematical intricacies.

However, I stress that oral and written mathematics needs to be precise to properly communicate mathematical concepts. I do not administer multiple choice exams and require students to express mathematics precisely on paper. At the beginning of a course, I provide clear expectations for students and emphasize that personal responsibility is required for academic success. While my primary responsibility is to ensure the students are competent in the subject matter of the course, the ultimate goal of a university education is to teach the skills required for independent learning. I contribute to that goal by enforcing consistently tough (but reasonable) standards that parallel the rigorous demands of the university. Identifying students who are struggling early on can prevent them from falling behind and if it is clear that a student is having trouble with the course, I contact them directly and offer personal assistance. This direct invitation often removes barriers to seeking extra help for students who are hesitant to obtain assistance. Furthermore, a number of highly-motivated students have approached me to discuss the possibility continuing studies in mathematics. Some of the most rewarding moments in my teaching career involved mentoring these students. I actively encourage them to take more challenging mathematics courses and discuss the value of having a strong mathematical background in their future careers.

Interests and goals

The proliferation of web-based learning, mobile technology, and many other significant technological advances has brought new challenges and opportunities for instructors. It has also caused me to reassess the role of lecturing and person-to-person instruction, which will no doubt be an ongoing topic of discussion in academic circles for years to come. In the past, I have provided

some supplemental screencasts for my students because some individuals learn better with verbal and visual direction rather than by written instruction alone. I have also come to recognize that there are several online sources, particularly `youtube.com`, that host the content of many talented math instructors who post instructional videos related to subject matter that I am teaching and I have referred students to these resources to allow them to experience multiple perspectives on a particular topic. I have been a contributor to the Math Educational Resources wiki for a few years and this has given me insight into web-based learning. I am interested in exploring the potential of this framework and its effect on student learning.

Furthermore, I am interested in developing accurate methods for efficient assessment of student progress. Teaching and assessing students with written homework may not be effective, since it is common for students to share solutions written by more capable peers. In my more recent lecturing position, I decided to replace some of the homework with in-class quizzes. I believe this gives a more accurate portrait of how effectively the students learn the material covered in the course.

I am also interested in finding ways to address the problem of widely varying math proficiency in new undergraduate cohorts. I plan to explore these issues in my future teaching positions and welcome any discussion surrounding these topics.

Last updated on November 10, 2014.