

Teaching Philosophy

Emille K. Davie

Being a graduate student instructor at the University of Georgia has been an exceedingly rewarding experience. I have had the pleasure of teaching several semesters of calculus, a semester of pre-calculus, and a seminar for new graduate student instructors. These opportunities have allowed me to develop my own set of teaching principles and ideologies. They have also enabled me to distinguish effective pedagogy from ineffective.

I have two main objectives when in front of a class. The foremost is to convey the material as clearly as possible, while giving the students motivation as to why we are studying what we are studying. My aim is not merely to make them memorize rules or theorems for use on an exam. It is to plant the seeds which will lead to a deeper investigation and appreciation of mathematics. It is my hope, for example, that every student in my calculus class leaves with a clearer understanding of the subject, not with just the ability to take a derivative. One way that I can gauge their understanding is by assigning short answer or essay questions on exams. For instance, in the past I have asked my students to explain in detail why Newton's Method is a good tool for approximating zeros or to explain what e is.

My second goal is to encourage participation and inquiry during class. Keeping the lines of communication open will benefit both teacher and student. Most students are too busy taking notes to ask themselves questions about what is being presented. By pausing to pose questions throughout the lecture, I not only evoke thought on the subject matter, but I also give them the chance to process the information that they are taking in. Additionally, it gives me the opportunity to gauge how much they are actually understanding.

I have also supplemented my training outside of the classroom by performing various

teaching and advising duties given to me by the department. I have been fortunate enough to be the teaching assistant for MATH 7900, a bridge course for first year graduate students. This course covered a wide variety of topics ranging from continuity and differentiability to complex analysis and linear algebra. My responsibilities included grading weekly homework assignments and giving the students ideas on how to correct their mistakes. I have also assisted professors by observing and giving guidance to new calculus and pre-calculus instructors. This opportunity allowed me to sharpen my troubleshooting skills. Moreover, it gave me more insight into what does and does not work in the classroom. Finally, during the spring semester of 2005, I volunteered to run a problem session in algebraic topology to prepare junior level graduate students for the qualifying exam. During the sessions, I helped the students solve problems that I'd assigned the previous week by discussing common techniques and strategies in topology. Facilitating this weekly session was a learning experience for me, as well, and gave me valuable experience in relating to younger graduate students.

The overwhelming majority of the feedback and comments in my teacher evaluations has been positive and complimentary. As a result, in 2005 my hard work was recognized by the department and by the university. I received a UGA Outstanding Graduate Student Instructor award. I am extremely proud to be honored in this way.

I am committed to increasing the number of minority students who study mathematics, as well as ensuring that my class is a positive learning environment for all of my students. In 2001, I was chosen to participate in the Enhancing Diversity in Graduate Education (EDGE) program. EDGE is a four week summer program for women entering their first year of graduate school. Its main objective is to prepare students for graduate level mathematics, as well as life as a new graduate student. Students study analysis and algebra while there, but are also tracked and mentored throughout their graduate careers. This past summer, I was chosen to be a mentor for

the 2006 EDGE program at New College of Florida. As one of three mentors, I primarily ran problem sessions, but I also addressed their questions regarding graduate school and life as a graduate student. Having participated in this program as a student and mentor, I better understand the importance of having heterogeneity in a department among faculty and students, alike. This not only benefits the school in an academic sense, but it also addresses the much larger societal issue of promoting cohesion between people of varied cultures.

It is my hope that interacting with undergraduate and graduate students will be a sustainable part of my career in mathematics through teaching, conducting research collaboratives, like REUs, and eventually overseeing a young researcher's thesis. Teaching allows me to look introspectively and take personal inventory of how I relate to others. Without fail, I acquire a deeper understanding of the material to be presented each time I prepare a lecture. It is this love for gaining and sharing knowledge which makes me passionate about teaching.