

Teaching Statement

Scott Baldrige

I enjoy teaching and take pride in my work. I have enough experience to know what works and what does not in the classroom. Students say that I have the demeanor of a coach: pleasant and respectful but uncompromising in my expectations. I earn their respect because of my knowledge of the subject and because I treat each of them in a fair way.

I also work very hard to be efficient at my teaching duties outside the classroom. I have watched others fill up their workdays with extras (fancy websites, typed outlines of textbooks, etc.) which often add little value to a student's education. Instead, I concentrate on what matters most: lesson plans, helping students in office hours, and accurate grading.

Background

I have been teaching my own classes since 1995. I have taught almost every course from remedial algebra to third semester calculus. I have assisted with graduate level courses and run graduate level seminars. In spring 2004 I will teach a topics course on Seiberg-Witten theory at Indiana University. I was the advisor for a student (Russell Halper) in the REU program at Indiana University during the summer of 2003.

My responsibilities have often extended beyond the classroom. I have supervised numerous graduate and undergraduate teaching assistants. Currently (Fall 2003) I am the course coordinator for a course with 180 students and 4 instructors. These responsibilities include commenting on other instructors lectures, checking exams to insure content and form, and mentoring inexperienced teaching assistants.

I have also been involved in several special programs. For example, in the Enrichment Program at Michigan State University I worked with disadvantaged rural and inner city students who were severely unprepared for the rigors of college mathematics. I have also taught in a reform (Harvard) calculus program.

I am a co-author of a textbook on mathematics for teachers. More can be learned about this course and annotated lectures by going to math.msu.edu/emt.

Philosophy

Throughout the duration of a course, my primary goals are to impart to each student a working relationship with the material, an awareness of its usefulness in both future mathematics classes and beyond, and a sense of the inherent beauty of mathematics. In reverse order, here is how I try to accomplish this.

I believe students deserve a liberal academic education in mathematics. This means delivering a content-rich course where each fact, idea, or theorem that is an integral part of the course is thoroughly explained and justified either informally or formally.

I generally arrange a course around solving a set of hard problems or understanding a few key theorems. For example, in multivariable calculus I stated Stokes's theorem on the first day and described it as the key mathematical goal for the course. Then every few days I would write the theorem on the board and explain how the concepts students just learned (vectors, products, double integrals, etc.) related to the theorem. As the days went by, students saw for themselves their own knowledge progressing and the importance of the topics leading up to the theorem.

I try to assign and collect homework daily. I do this because I see a difference in student understanding. Statistically, my classes get higher means and smaller standard deviations on exams when homework is graded than when it is not. This is often much easier to do nowadays due to web-based homework.

Pedagogy

Whether it is taking careful notes, answering verbal questions in class, or working on a short in-class assignment, *students are expected to actively participate in class at all times.*

I generally use whole class instruction. However, I would not characterize my teaching style and pedagogy as either “traditional” or “reform.” These two terms mean different things to different people, so I avoid using them. I work off of annotated lectures which are prepared before class (for an example of an annotated lecture see the website above). These handwritten scripts contain many natural checkpoints where I stop and ask the whole class a set of quick poignant questions to check for understanding and to further develop ideas. The many checkpoints often make the instruction look more like a discussion or dialog than a lecture. Yet students come away from class with a complete set of lecture notes they can use for studying.

Depending on the level of the material, instruction is punctuated by short, structured group or seat work assignments. My group work mimics Eastern style (Japanese, Chinese, etc.) rather than the usual U.S. approach where group work is used in lieu of a lecture. Groups are limited to 2 people and each assignment is specific and answerable in 2–3 minutes.

Results

I feel successful when my students as a group meet or exceed high expectations. For example, in courses I have taught where there is a common final for multiple sections, my students have always performed better (on average) than students from other sections. I also keep daily attendance. My students have had a 90+ percent attendance record since I started taking attendance four years ago. A personal success story of mine was a remedial student who I taught for two semesters in the Enrichment Program who went on to graduate with a major in mathematics.

Evaluations

How do the students feel about me? They like me but think I am demanding. I seem to have a knack for relating mathematics to their lives and future jobs, so they are willing to work hard for me. By the end of the course they are successful and that success is what is reflected in my students’ evaluations. At Indiana University, my students state that the overall quality of my instruction as outstanding — average response for all classes I taught at Indiana University were: 3.00 for Fall 2001, 3.36 for Spring 2002, 3.31 and 3.4 for Fall 2002. Students were asked if the overall quality was outstanding where 4 means “Strongly agree” and 3 means “Agree”. My overall rating at Michigan State University was almost always over 3.6/4.0 (this is an overall rating and different from IU’s rating system). In the table below are examples of my evaluations from classes at Michigan State University. Note that 4 is the highest mark and the number in [] is the average for all teachers who taught that course.

Term	Course	Enthusiasm	Concern	Preparedness	Understand Material	Communication	Overall
F95	Alg.	4.00 [3.28]	3.93 [3.04]	3.93 [3.36]	3.87 [3.28]	3.80 [2.93]	3.93 [3.04]
S97	Calc.	3.95 [3.46]	3.75 [3.18]	3.95 [3.50]	3.90 [3.45]	3.85 [3.01]	3.90 [3.20]
S200	Arith.	4.00 [3.52]	3.64 [3.20]	3.91 [3.40]	3.86 [3.35]	3.68 [3.13]	3.73 [3.19]
S99	Geom.	4.00 [3.46]	3.63 [3.08]	3.79 [3.31]	3.74 [3.28]	3.79 [3.02]	3.68 [3.03]
S97	Calc. III	3.95 [3.22]	3.86 [3.01]	3.90 [3.25]	3.90 [3.31]	3.90 [2.85]	3.76 [2.99]

Please feel free to browse my web page mypage.iu.edu/~sbaldrid for the complete set of scores and sample comments. My grade distribution for Fall 2002 can be accessed at (search for “Baldridge”): registrar.indiana.edu/GradeDistribution/20021_report1a.html#MATH.