

# Teaching Statement

Melanie B. Butler

**Teaching Experience:** The following chart lists some of the classes in which I have been the instructor. My duties in these classes included the following: deciding how to structure the course, writing and grading exams and quizzes, assigning and grading homework, assigning final grades, holding office hours, and advising students. Please see my CV for a complete list of my teaching experience. More information about the special activities listed in the chart can be found in the teaching philosophy below and in my teaching portfolio (available on my website).

**Course:** Pre-Calculus (Math 74) Summer 2003

**Students:** mainly freshman and sophomore education and pre-pharmacy students who would take Calculus I in the

**Special Class Activities:** trig notebook project, frequent group work, several long-term enrichment projects

**Course:** Differential and Integral Calculus (Math 77) Spring 2003

**Students:** mainly freshman and sophomore architecture and computer science majors

**Special Class Activities:** e-mail report project, derivative letter project, frequent group work, writing in mathematics on exams, on-line homework, internet enrichment, extensive class website

**Course:** College Math (Math 55) Fall 2002, Fall 2001, Summer 2001, Fall 2000

**Students:** students of all ages majoring mostly in education and the social sciences

**Special Class Activities:** in-class projects and demonstrations, emphasis on real world applications, frequent group work

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**Teaching Philosophy:** In September 2000 I walked into a classroom for the first time as an instructor, and laughed. I was in charge of a roomful of students barely younger than I yet I had little experience, previous teaching knowledge, or ideas about how a course should be run. I had found out that I was teaching this basic mathematics course for non-science majors only a few days earlier, and had since worried about how to run the class. With no prior experience as a teacher, I drew on my experiences as a student. I decided to structure the course how I wished my college mathematics courses had been run. There would be lecture every day, four exams, and no required homework, attendance, or quizzes. I soon learned that what worked best for me was not necessarily what worked best for my students. Furthermore, many of these students came into the course with a strong dislike for mathematics and a desire to get through this basic graduation requirement with as little work as possible. With no incentive to attend class or to work on the material outside of class, the students did neither. Thus, a few weeks into my first semester teaching I had learned a very important lesson: teaching requires innovation and an ability to appreciate and understand your students' perspective. Fortunately, I have taught this course many times since that first semester, so I have had an opportunity to revamp my teaching style. I have used weekly quizzes and homework problems based on real life situations to help my students stay motivated outside of class. Frequent hands-on projects and group work help to keep the students motivated in the classroom. Several students have commented on evaluations that these methods have helped them to understand concepts that they had never before understood. As I have continued to teach at Temple University and continued to think deeply about teaching mathematics, I have been able to use many new ideas in and outside of the classroom. For example, I recently taught a differential and integral calculus course where the emphasis was on understanding and intuition, rather than computation. This approach to calculus gave me the opportunity to incorporate writing into this course. I asked the students to send me "e-mail reports" on every chapter that we discussed. A student's goal in an e-mail was to explain the material in her own words or, if she didn't understand the material, to explicitly state her difficulties. Carefully thinking through a chapter and formulating specific questions helped the students to analyze the course material. The e-mail reports helped me see who was still struggling with the material and I was then able to respond to help with any problems. Many students commented on the course evaluations that the e-mail reports and my responses to the e-mails were two of the most valuable aspects of the class. I have also had an opportunity to use other class projects about which students were particularly enthusiastic. For instance, I asked my students in a calculus course to write a letter explaining differentiation to a friend or relative with no particular mathematics background (one student even wrote to Elvis!). In a pre-calculus course, my students made "trig notebooks" that could be used as a reference

in the future. Many students used this opportunity to express themselves artistically and to think carefully about the presentation of mathematics. Overall, I believe that traditional and non-traditional methods have enabled me to reach the most students, and have also encouraged my students to perform to their full potential. I have also found, however, that my attitude as an instructor greatly affects my students' ability to learn. I believe that it is vitally important that my students know how devoted I am to their class and their learning. To accomplish this task, I frequently ask my students to fill out surveys throughout the semester that will allow me to improve my teaching in that particular course. Also, I usually have an assignment at the beginning of the semester that involves my students stopping by my office. Once a student has been to my office and seen that it is not scary or intimidating, she is much more likely to visit in the future. I am very excited to begin teaching mathematics full time. I have found working with students of all abilities rewarding and I am anxious to continue teaching at all undergraduate levels. Furthermore, I would be enthusiastic about an opportunity to bring mathematics to students outside the classroom. I hope to become involved with or organize a mathematics club for all students, or tutoring programs for those students who are struggling. I am also particularly interested in undergraduate research. Part of my dissertation uses a result from an REU that my thesis advisor ran. Thus, I know firsthand the importance of undergraduate research and collaboration among mathematicians at all levels.

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**Summary of Student Comments from Evaluations:**

- “The instructor helped me understand concepts that I’ve never understood. She was great.” (College Math fall 2001)
- “Melanie Hancock is a GREAT teacher! Make sure to keep her and recruit more teachers like her!” (College Math fall 2001)
- “Melanie really made me feel like I was smart in math.... She genuinely cares for her students....” (College Math fall 2001)
- “Melanie helped me to enjoy and do well in a subject that is very difficult for me. She is very much a great teacher with a wonderful personality and presence.” (College Math fall 2001)
- “...the class has a very nice atmosphere. The instructor uses time well.” (College Algebra spring 2001)
- “The teacher treated everyone fairly and equally.” (Differential and Integral Calculus spring 2003)
- “I definitely liked the teacher the best! She explains everything thoroughly and is willing to always give extra help.” (College Math fall 2001)
- “She put the material to us in an interesting, informative way and I feel she really helped me to understand the class.” (College Math fall 2001)
- “We worked during class. The time flew.?” (Differential and Integral Calculus spring 2003)
- “Melanie shows interest in the material, interest in teaching, and interest in helping others progress.” (College Math fall 2001)
- “This was my favorite class this semester and teacher, too.” (College Math fall 2000)
- “I liked the teacher because she makes the class interesting.” (College Algebra spring 2001)
- “She always makes herself available to the students and she is very understanding.” (Differential and Integral Calculus spring 2003)
- “Melanie should teach Math 65. I would be so happy to have her again.” (College Math fall 2001)

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**Numerical Summary of Student Evaluations** Below is a chart with a numerical summary of most of my teaching evaluations. If a course that I taught is not listed in the chart, then the university did not distribute teaching evaluations for that semester or I have not yet received that courses evaluations. Each entry is the mean score that I received for that question in that particular course. Scoring is as follows: 5 - Strongly agree 4 - Agree 3 - Neutral 2 - Disagree 1 - Strongly disagree

The responses are listed in the following order: College Math Fall 2000(7 responses), College Algebra Spring 2001(13 responses), College Math Fall 2001(36 responses), Diff. And Int. Calc. Spring 2003 (10 responses) I would recommend the instructor of this course to a fellow student. 3.429 4.333 4.741 4.63

The instructor gives clear explanations. 4.000 4.000 4.704 4.63

The instructor seems well prepared for each class. 3.714 4.667 4.871 4.75

The instructor appears to have a thorough knowledge of the subject of the course. 3.571 4.667 4.852 Not asked on this evaluation

The instructor makes good use of examples and illustrations. 4.286 4.000 4.630 4.57

The instructor makes the material interesting. 2.571 4.000 4.297 Not asked on this evaluation  
The instructor uses class time well. 3.286 4.667 4.760 4.50  
The instructor acknowledges all questions to the best of his or her ability. 4.471 4.333 4.815 4.63  
The instructor is enthusiastic. 2.857 4.000 4.482 Not asked on this evaluation  
The instructor maintains an atmosphere of good feeling in the classroom. 3.286 4.333 4.667 4.63  
The instructor treats students with respect. 4.571 4.667 4.871 Not asked on this evaluation  
The instructor motivates me to do my best work. 3.286 4.000 4.334 Not asked on this evaluation  
I gained a good understanding of concepts and principles in this field. 3.571 4.333 4.333 4.25  
The instructor set high standards for students. 3.429 4.000 4.037 Not asked on this evaluation  
I feel that I am performing up to my potential in this course. 3.714 4.000 4.315 Not asked on this  
evaluation  
I had a strong desire to take this course. 2.429 4.333 2.866 2.86