answer questions from the class. During the presentations, the class was also graded on their ability to ask insightful questions and to find any mistakes from the presenter.

From the student comments, they seemed to really enjoy the class. In fact, they wanted more active learning. If I teach this course again, I think I would have more group and board work to satisfy this request. Perhaps up the amount of student presentations to 3 total and adjust the class format to consist of 25% lecture and 75% in class exercise work. Overall, the class was an overwhelming success. I do like having the take home midterm with 50% back. I had some comments from my colleagues that the 345A students were working diligently for many many hours on both the take home midterm and the subsequent re-do. The whole point was to get them working hard and thinking about mathematics. Simple things like this particular style of exam for upper division students seemed to work well.

In Table 2, the course evaluation scores are displayed. Seven of the questions pertaining to the course and professor had an average response of 5 out of a possible 5. In particular, from question 20: "The professor challenged students to think critically and/or imaginatively about the course material," I obtained a 5/5 average response score. My key goal was to get them to think on this level and to not only internalize the methodology of differential equations, but to think of real world applications. One particular math major ended up doing her senior thesis on modeling zombie populations using DE's which was inspired from a class active learning exercise based on this very topic. One of the lowest response scores was for question 21: "The professor provided clear and timely feedback." The score for this was 4.3/5. One possible explanation of this can be attributed to how the homework was due every two weeks. This in turn would take another 1-1.5 weeks to grade resulting in a 3-3.5 week full turnaround from assignment listed to full grade. One solution, which I will implement in the future, would have 2 installments per assignment, each due on a weekly basis. Another alternative would be to simply switch to a weekly HW format.

2.2.3 Math 079 Spring 2013

MATH 079 Quantitative Reasoning is a course that is generally taken by students not majoring in science or mathematics in order to fulfill the COM1 Liberal Education requirement. In the Spring 2013 semester I taught two sections of MATH 079. The course catalog description follows:

> **Math 079 Quantitative Reasoning** This course is designed to help students develop their ability to create, analyze, and communicate quantitative and scientific arguments. It will emphasize critical thinking and problem-solving skills while also giving students practice in computation and symbolic manipulation. Topics to be covered include elementary linear equations, polynomial modeling, working with and understanding graphs and graphical presentations, and elementary probability and statistics. These topics will be presented in the context of applications and models from various disciplines. (Not open to those who have had 81, 85, 139A, or 141A. Does not satisfy the prerequisite for MATH 81 or 85 or PSYC 314.) Prerequisite: 74 or 76, or sufficient score on Math Placement Exam. One semester, 3 credits.

Table 3: Math 79 section 3 and 4, Spring 2013, 32 Students

	Evaluation Questions	Average Response
	I. Student Self-Evaluation	
1.	I attended class regularly.	4.61
2.	I was academically prepared to handle the material.	4.10
3.	I came prepared for each class session (i.e. have read all course readings and completed assignments).	4.35
4.	I actively participated in class discussions.	4.00
5.	I attended scheduled office hours if I had questions about the course materials.	3.41
6.	I tried to relate course material to other things I know and/or study.	4.38
7.	I worked to my full potential in this course.	4.19
8.	I was satisfied with my performance in this course.	4.23
9.	I had a strong desire to take this course.	3.10
	II. Course	
10.	This course had clear goals and objectives.	4.68
11.	This course was academically challenging.	4.58
12.	This course offered useful learning tools.	4.48
13.	This course had grading criteria that were clearly identified.	4.52
14.	This course improved my understanding of the material.	4.65
15.	This course increased my interest in the subject matter.	4.26
16.	Overall, I would recommend this course to others.	4.47
	III. Professor	
17.	The professor used class time effectively and demonstrated preparation for class.	4.74
18.	The professor's teaching style and/or enthusiasm for the material strengthened my interest in the subject matter.	4.65
19.	The professor was able to explain complicated ideas.	4.65
20.	The professor challenged students to think critically and/or imaginatively about the course material.	4.65
21.	The professor provided clear and timely feedback.	4.48
22.	The professor encouraged meaningful class discussions.	4.65
23.	The professor was receptive to differing views.	4.77
24.	The professor was available for help outside of class.	4.90
25.	Overall, I would recommend this professor to others.	4.71

In this course I chose 4 topics which included: real world shapes and applications, probability, growth and decay, and consumer mathematics-buying and saving. I especially enjoy teaching this course given the diverse group of students that I am able to work with. All of them are non-math majors but my goal is two fold: 1. spark the interest in mathematics through its applications and 2. use the aforementioned 4 topics as mediums for building up the students quantitative reasoning skills. In general, the world is becoming more quantitative in nature. Think about the way companies like Google utilize mathematical algorithms to show a internet user optimal advertisements based on their web browsing history. Businesses are also becoming more quantitative as they look to more mathematical or statistical methods to optimize their performance. Allowing students to see these types of things first hand and to also allow them to gain some quantitative skills is exceptionally rewarding to myself.

Since I taught two sections of this course back to back and covered the same material. I averaged the scores from both courses into one. The method of evaluation was as follows: homework (15%), active learning class exercises (10%), two midterms (combined 40%), and a final exam (35%). For this course, I did not allow midterm corrections but I am open to the possibility in the future.

The daily classroom format included a short lecture as needed of about 15 mins and then group active learning work where I distributed worksheets and walked around inspecting the students approaches and asking questions that would guide them through the problems. I found this method to be very effective at engaging the students. Often times, the students would stay after lecture for an additional 15-20 mins trying to finish up the worksheets. Many students commented that one of the best aspects of this course was the active learning. In addition, I did 6 computational MATLAB real time demos in class pertaining to both the growth and decay as well as the consumer mathematics sections.

In Table 3, the students average responses are observed. The lowest average response score was for question 9: "I had a strong desire to take this course." The average was a 3.1 out of a possible 5. I found many of the students had put off this course until their junior or senior years. Despite this, I found the response pertaining to the course and the professor (questions 10-25) to be quite high relative to the students self-evaluation responses. From the scores, clearly the students felt that they were academically challenged and the students were also challenged to think critically and/or imaginatively about the course material. Some comments include:

> "I like this course very much. It is the 1st math class I've ever enjoyed. Dr. Park went the extra mile for the students. His enthusiasm was great. Thank you for giving me a new perspective on math"
>
> "I really liked [the] manner in which the course was structured. There was a good combination of lecture and group work"
>
> "I've never enjoyed a math class in my life. I enjoyed this one. Dr. Park is an excellent teacher."
>
> "This was honestly one of my favorite classes here at Whittier and I'm not even a math major."