TEACHING STATEMENT

He Wang

1. Teaching Philosophy

I love mathematics and I enjoy teaching mathematics. Showing the beauty and power of mathematics to students is an extremely happy experience.

In my opinion, being well prepared is very important to teach effectively. For each class, I prepare every lecture very carefully. When I prepare my lectures, I consider many aspects: the goal of the class; the most important part of the class; the most difficult part of the class; the easiest way to understand the concept; the best example to illustrate the technique. I also think about how to organize the lesson and how to use the blackboard effectively.

The role of students can never be substituted in teaching activities. I always encourage my students participating in class and asking questions. I provide various kinds of opportunities for them to think and practice themselves in class. I also give them enough practice problems as homework, which is essential in studying mathematics. Teaching with enthusiasm and passion is helpful to hold student’s attentions in class. I try to help them to love mathematics, by showing them how I love mathematics. Students, who are not majoring in mathematics, want to see the applications of mathematics in a real life situation. When I taught calculus to business major students, they were excited to use derivative to find the maximal profit in a marketing project.

I think it is very important to maintain a good relationship with students. I try my best to let them feel that I am working with them and I am helping them to learn mathematics and get a good score. I show my patience and respect to my students, especially when they have difficulties. I am always friendly and nice to them, when they ask me questions.

2. Teaching Experience

2.1. Teaching background in China. I did my undergraduate studies at a university which has a excellent atmosphere on mathematics education, where, I took some courses for the theory of mathematics education, e.g., “Educational Psychology”, “Teaching Methodology of Mathematics” “Pedagogy”, and I also had a short teaching internship in high school in China. The theory, the internship and the atmosphere of the university strengthen my teaching ability a lot.

2.1. Teaching Assistant at Northeastern University in Boston. My first teaching experience in the US was in fall 2010. Since then, I have served as a teaching assistant for many different courses, e.g., differential equations and linear algebra, real analysis, number theory and calculus. When I taught recitation classes and helped students solving problems during my office hours, I always guided them to find solutions themselves. I would break the question into smaller parts, and break the solution into steps. This was very helpful for students having difficulty solving problems. For example, when I helped them using chain rule to compute derivatives, I would like to use three steps: step 1, find the inside function and outside function; step 2, compute the derivative for both functions; step 3, using chain rule formula to write down the solution.
2.2. Independent instructor at Northeastern University in Boston. My first teaching experience as independent instructor was in fall 2014, when I first taught Calculus for Business and Economics as an instructor. I had the largest section with 56 students. In fall 2015, I taught Calculus for Business and Economics again with 38 students. My students enjoyed my teaching and they got very good scores in the final. In addition, I shared all my lecture notes, exams, and slides for this class with several instructors.

2.3. Independent instructor at the University of Nevada, Reno. At the University of Nevada, Reno, I teach two sections of Linear Algebra each semester. In these classes, most of the students are from the college of engineering and the college of science. I will provide them with various application backgrounds, like the application of eigenvalue and eigenspace on Google’s search engine, application of system of linear equations on Traffic Flow projects, etc.

2.4. Graduate classes and seminar lectures I occasionally substituted my advisers at Northeastern University and University of Nevada, Reno, teaching some high level classes such as, Group theory, Abstract Algebra, Real Analysis, Topology I, and Topology II. I gave presentations in Topology III and Symplectic Geometry. I also gave talks in research seminars and conferences. No matter what level is the talk, audiences are always important. I always prepare my talk based on my audiences.

Relating research work to calculus teaching is an interesting experience. When I compute and analyze Hilbert series, I use some derivative techniques. The polynomial computations using Gröbner basis and combinatorics in my research are interesting for a senior undergraduate student to accomplish a project.

3. Teaching Methods

Most of the time, I gave lectures using chalk and blackboard. I think this is the best way for students to study the skills of mathematics. However, I would like to use all possible computer technology to assist my teaching, such as slides, projector and videos. For example, I made slides to teach them how to use calculator TI-84, in addition, I made videos and uploaded them to YouTube. This is also easy to share with the other instructors. To improve my teaching, I asked feedback from my students every two weeks about my teaching pace and the difficulty level of the class. I made extra practice problems and gave handouts to students. For each class, I wrote my own lecture notes by Latex and posted them online. My students said that those notes were very helpful for them to prepare quizzes and exams.

4. Teaching achievements

For each class I was teaching, my average rating as a teacher was good, which are listed at the end of the statement. Students love my teaching style and they always recommend me to their friends. I value students feedback for each class, and I will use them to improve my teaching. All my teaching materials and my teaching evaluations are available on the teaching page of my website: http://wolfweb.unr.edu/homepage/hew/

I quote some feedback from students evaluation here:

“He is a very helpful and knowledgeable professor. I would highly recommend him to my friends.”
“He cares about the students and has a strong understanding of the course.”

“Mr. He Wang is a good teacher as he gives many examples so that students are as prepared as they can be for the exam and gives good feedback to students that don’t understand a problem.”

“Explain the knowledge point carefully and clearly; homework and quiz are very useful for us to understand the concepts; treat us with respect.”

“Professor Wang is overall a very good math teacher, showing enthusiasm, patience and understanding towards his students.”

“ He Wang is a very knowledgeable and nice teacher. He cares a lot about his students grades (maybe more than they do). He does his best to teach the class and overall achieves his goals.”

“ The professor’s instruction was fantastic. He explained the concepts of linear algebra in a clear and concise way, made very good use of pictures and diagrams, showed real-world applications of the methods, went over many example problems as well as giving out practice tests prior to exams, and overall just did an excellent job.”
Teaching Activities
HE WANG

1. Instructor at University of Nevada, Reno

2018 Spring Calculus 2. (Two sections.)
2017 Fall Linear Algebra. (Two sections.)
2017 Spring Linear Algebra. (Two sections.)
  (Section1: 48 students. Teaching evaluation\(^1\) 3.5/2.9\(^2\))
  (Section2: 60 students. Teaching evaluation 3.2/2.9)
2016 Fall Linear Algebra. (Two sections.)
  (Section1: 41 students. Teaching evaluation 3.2/3.0)
  (Section2: 54 students. Teaching evaluation 2.9/3.0)

2. Instructor at Northeastern University

2015 Fall Calculus for Business and Economics.
  (37 students, Teaching evaluation\(^3\) 4.2/4.3)
2014 Fall Calculus for Business and Economics.
  (54 students, Teaching evaluation\(^4\) 4.5/4.2)

3. Teaching Assistant at Northeastern University

2016 Spring Differential Equations and Linear Algebra.
2015 Summer Number Theory.
2015 Spring Calculus 1.
2014 Spring Calculus for Business and Economics.
2013 Fall Calculus for Business and Economics.
2013 Spring Calculus for Business and Economics.
2012 Fall Calculus for Business and Economics.
2012 Spring Differential Equations and Linear Algebra.
2011 Fall Calculus 1.
2011 Spring Real Analysis.
2010 Fall Differential Equations and Linear Algebra.

\(^1\)Teaching evaluation scale at University of Nevada, Reno is 0 – 4.
\(^2\)Teaching evaluation is in the format: My point/Math department mean
\(^3\)Teaching evaluation scale at Northeastern University is 1 – 5.
\(^4\)The full evaluation reports, syllabus and lecture notes are available on the Teaching page of my website:
http://wolfweb.unr.edu/homepage/hew/ )