

My passion for teaching developed when, as an undergraduate student, I taught geometry and calculus to high school students and co-organized several math workshops for the Mathematics Department at Sharif University. This interest in teaching was further encouraged as a Ph.D. student at Rutgers University, where I taught several calculus recitations and workshops. Like my research, my teaching experiences have bridged disciplines; as a Ph.D. student I ran a workshop in “Dynamical Systems with Applications in Biology” for biology majors. As a postdoc at Princeton University, although teaching was not mandatory, I took advantage of teaching opportunities and taught two graduate courses and one undergraduate course. At the University of Iowa, I have been teaching a wide range of courses, from low-level undergraduate courses (Calculus and Linear Algebra) to high-level undergraduate courses (Introduction to Mathematical Biology) and from graduate core courses (Nonlinear Dynamics with Numerical Methods) to high-level graduate courses (Mathematical Biology, ODE, and Topics in Mathematical Biology).

Depending on the course level and students’ background, I pursue appropriate teaching styles to foster enthusiasm for mathematics in my classroom and to help the students develop fundamental skills in problem-solving, team-working, and scientific writing. First, mathematics is a subject with interesting history, and sharing this often engages students. Second, motivating examples from other fields, such as biology, chemistry, physics, engineering, and economics, help maintain students’ interest. Third, explaining concepts intuitively, connecting seemingly unrelated aspects, and pointing out connections between a new concept and those they have already learned help students remember the new materials and reinforce earlier concepts.

In lower-level courses, if time permits, I spend a few classes on problem-solving by letting the students work on a problem in small groups, including students with various mathematical abilities. I walk around the class and guide students with hints, refer them to a relevant exercise from the textbook or ask them to draw a picture. This way, the whole class is involved in active problem-solving, and I obtain immediate feedback about which concepts I need to re-emphasize. Combining students with a range of abilities benefits the class as a whole; stronger students have a chance to reinforce their understanding of the concepts by teaching their peers while struggling students benefit from explanations from various sources. This technique is most useful for small classes, but for large classes, this can be done by teaching assistants in recitation sections which typically contain a smaller group of students. In the end, I ask one or two groups to present their solutions to the entire class.

In core graduate courses, the main goal is to prepare the students to be successful in the qualifying exams. However, most students decide about their research areas in these classes. In my core graduate classes at U. Iowa, at least four students chose to study dynamical systems with applications in biological sciences each year. My teaching style in high-level graduate courses differs from other classes. The students in these courses have already passed their qualifying exams and must prepare for research. For these courses, I focus on developing students’ skills in reading and writing research papers and delivering research talks. For example, in my ODE class at U. Iowa, each student chose a system of

equations to work with throughout the semester; every 2-3 weeks, they gave a 5-10 min class presentation and a short report. Finally, they wrote a 10-page report and gave a 30-min presentation.

I believe lecturing is not a one-way communication system. Although it is always challenging to get students involved, I think there is no better way to help them learn more efficiently. I engage the student by posing several questions during my lectures and giving them enough time to think through. Sometimes, I let the students explain the materials to each other.

In many universities, students can fill out a survey at the end of each semester to evaluate their instructor. This evaluation is helpful for future teaching, but I firmly believe that my students should benefit from their own comments and suggestions. To accomplish this, I frequently use *minute* papers in my classes to receive anonymous feedback and adjust my teaching appropriately. I often ask the *Teaching Center* for observation and the mid-semester check-in with students about their learning. I specifically enjoy interacting with students. I pay attention to students' efforts in class ¹. In particular, if students lose enthusiasm during the semester, I feel that it is my responsibility to put them back on track. For example, after a few weeks of the semester, in one of my calculus classes at Rutgers, I realized that one of my good students was not as active as she used to be. I approached her in a friendly manner to figure out the reason for this sudden change in motivation. While she told me she was tired because she had to work to afford her tuition fees, I encouraged her to come to my office at her convenience for any help she needed in the course. Knowing that someone cared about her progress and having the flexibility to meet with me on her schedule motivated her to study hard again. She passed the class with a B+. I will never forget the joy of what we achieved together!

My high teaching evaluation scores and comments reflect how much I care about my students learning. My course median scores for supporting students learning are between 5.7 and 6. I also received a couple of letters through the Thank-a-Teacher Program.

Besides engaging students in classroom settings, I enjoy mentoring students and post-docs and involving them in my research. Since I received my Ph. D., I have mentored/co-mentored two undergraduate students, several graduate students, and two postdocs. Currently, I supervise three Ph. D. students.

I am enthusiastic about teaching math courses of various levels; each has its own unique experience and lesson. I enjoy teaching classes I have never taught and courses I have taught multiple times. In the former, I am very enthusiastic about the new material, and my enthusiasm tends to be contagious with my students. In the latter, I find the opportunity to improve my teaching style using my past experiences and the surveys!

¹I believe in the "Growth mindset," the idea that Professor Carol Dweck has popularized it. "In a growth mindset, students understand that their talents and abilities can be developed through effort, good teaching, and persistence. They don't think everyone's the same or can be Einstein, but they believe everyone can get smarter if they work at it."