

TEACHING STATEMENT

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My goal in teaching is to provide students with the ability to learn at their full potential by removing common obstructions to student learning. My teaching journey began as a tutor in college, where for years I worked one-on-one with struggling students every day. Many of these students were afraid of learning mathematics, some were unmotivated and pessimistic about what they were learning, and others felt they simply didn't have enough resources to survive in their courses. By combating these issues, the students I teach and help are enthusiastic about coming to class and recitations, and many are optimistic about their ability to succeed in my courses.

Since my time as a tutor, I've taught recitations, instructed courses, and even advised undergraduate student research. The range of topics I've taught has ranged from remedial mathematics courses through graduate qualifying exam preparation courses. Often I've had flexibility to design and instruct these courses in my own style, which I've developed through years of teaching and valuable feedback from students.

Environment. I aim to be as accessible and approachable as possible to my students in effort to ease fears and misconceptions students have about mathematics. There are students who are afraid that learning mathematics is too difficult for them or that they're unable to learn it. These students need to be shown that learning mathematics is a challenge for everyone, that it can be overcome by anyone, and that making mistakes is part of the process. I happily admit my mistakes and typos to my students as well, noting that these things happen to everyone regardless of level of understanding and age. This creates an atmosphere that not only allows, but also encourages students to ask questions and learn from their mistakes. By confronting this issue directly, students in my classes are more comfortable talking to me, asking questions, and even working on their own.

For some students, these fears may be reduced, but not removed altogether. Many of these students lack the confidence to move forward with learning mathematics on their own and need a helping hand to get them started. I bolster these students by asking them to walk me through steps of problems both in class and in office hours. Often these students do understand the material and completely explain the problem, showing them that they are capable. When issues arise, these become teachable moments for the students, as well as reinforcing that everyone makes mistakes and has trouble with understanding at times. Often this doubles as a way to highlight common mistakes for the students.

Engagement. Active learning plays a large role in the courses I teach—I often have students work in groups to answer questions posed in class and to complete assignments. This teaches students to be able to communicate mathematics more effectively as well as learn other perspectives on mathematical content from other students. Students have voiced their appreciation for this group work, as they better understand and retain the material.

For students reaching beyond the scope of course curriculum, research opportunities provide a useful tool for expanding their knowledge. By directing them through a mixture

of readings and meetings, these students can begin to understand some of the tools and machinery used in mathematics research. This hands-on work with students allows them to explore areas and material they might not normally see in the classroom. Having participated in these experiences firsthand as an undergraduate, I want to be able to provide the same opportunities for future students as well. In addition, these experiences have been beneficial for me as well. A recent collaboration with an undergraduate student produced a conjecture in my research via an experimental study of various examples.

Technology. I strive to accomodate my students, regardless of their circumstances inside or outside the classroom. Mathematics has become more accessible than ever through the use of technology, assisting students trying to learn outside of the classroom. In my courses I post all course materials: lecture notes (empty and filled), quizzes, and recorded lectures for those unable to attend in person. Further, meeting with students online has become quick and efficient means of addressing issues and helping to answer problems. During the recent pandemic, this was a necessity to adapt to online teaching. Since then, this continues to provide students with a comprehensive collection of resources and content to use for their studies. For students with disabilities such as auditory or visual impairment, these resources provide them with a means of navigating through these courses.

As technology evolves, its use in the classroom does as well. Assignments utilizing technology are a refreshing break from traditional problem sets and are often more engaging for students. Video submissions, for example, allow students to introduce some of their character and personality to their work. Another flavor is the use of computer algebra systems and programming to perform complex calculations. In engineering calculus courses, this provides a means of demonstrating the relevance and use of mathematics in their field. Having taught courses and recitations with these types of assignments implemented, I'm an advocate for the continued use for technology in the classroom and in assignments.

Student Quotes. Here are a few selected quotes from student evaluations:

- “I think that other instructors can learn to listen to their students like my professor does. He always stops and answers questions but is also very personable. I think that not only am I not afraid of asking in class questions, but I feel like I will also be given a good answer as well.” - Finite mathematics student
- “Mr. Yahl is a good teacher. I found myself generally understanding the concepts as they were being taught, enough to explain it to others. He managed to make math kind of fun.” - Finite mathematics student
- “Professor Yahl was incredibly helpful during class and was always willing to help us understand the material, no matter how simple or complex of a question we had. He was very clear in every step of the examples given in class and made it very easy to learn the material. I had a great time in his class and will absolutely recommend him to my friends!” - (Online) Business calculus student

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