

## Statement of Teaching Philosophy

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29/100. I had only earned 29 points on my first big exam as a physics major. I thought I had understood the material, but I quickly found myself questioning not only my preparation but my choice of major. My professor attempted to assuage our fears, encouraged us to persevere, and imparted on us that with the right mindset we could improve our trajectory in the course. He instilled in me the confidence that despite a poor initial performance, I could use this opportunity as a learning experience. He helped me see my poor performance not as a failure, but as a valuable learning experience. While I eventually mastered Lagrangian dynamics and non-inertial reference frames, the most important lessons I took from that course were about resilience, growth, and the role a compassionate instructor can play in a student's journey. These lessons form the foundation of my teaching philosophy, which is built on four guiding principles: helping students overcome negative mindsets, fostering resilience, encouraging curiosity, and providing the support they need to succeed.

### **1. Overcoming negative mindsets and fostering resilience**

A student's mindset shapes how they engage with the material. Early in the term, many students come into physics courses with anxiety or self-doubt. I believe it is the responsibility of instructors to address these challenges directly. On the first day of class, I often share my 29/100 anecdote to demonstrate that failure is not a verdict, but rather a step in the learning process. I emphasize that mistakes made while working through problems collaboratively are not setbacks but opportunities to uncover and correct misconceptions before they appear on exams.

I strive to be approachable so that students feel comfortable discussing what they don't yet understand. Sharing my past struggles with physics humanizes the subject and helps students see that persistence can lead to growth. I encourage them to adopt the mindset of "*I don't understand it yet,*" to help them mentally refocus and open the door to progress. Asking for help, I tell them, is not a weakness but a strength. This mindset not only supports their academic success but also prepares them for personal and professional challenges beyond the classroom.

### **2. Encouraging curiosity through active engagement**

The phrase "physics lecture" often evokes images of one-way communication and passive notetaking. While some direct instruction is necessary, I believe that interactive, hands-on learning is crucial for lasting understanding. I incorporate inquiry-based and cooperative learning techniques into my classes, and I frequently use demonstrations to spark curiosity. There's a noticeable buzz in the room when I unveil a mysterious demo or pose a surprising question for discussion.

I also use humor and physicality, including using my whole body as an impromptu demo, or imitating racecar noises to discuss the Doppler effect, to make concepts memorable and engaging. Drawing connections between course content and everyday experiences helps students see the relevance of what they're learning. Whether it's the pitch change of a filling water bottle or the pressure fluctuations caused by a car window, I use these relatable phenomena to guide

students in developing their own explanatory models. This approach not only deepens their understanding but helps them build the critical thinking skills they need to ask meaningful questions and seek thoughtful answers.

### **3. Supporting all students equitably**

An inclusive classroom is essential for effective teaching. Throughout my time as an Associate Instructor and lead TA at UC Davis, I've worked closely with the Student Disability Center to ensure students receive the accommodation they need. I implement Universal Design for Learning (UDL) principles by offering information through multiple formats including visual aids, simulations, videos with captions, and clear, accessible language on assessments. These strategies support all students, especially English language learners and those with different learning needs.

As a member of the Graduate Teaching Community, I've engaged in interdisciplinary conversations about pedagogy and equity, reflecting on how students' backgrounds shape their educational experiences. I recognize that students enter the classroom with diverse histories and identities, and I work to create an environment where all feel respected, challenged, and supported.

### **4. Meeting students where they are**

At every stage of the term, I aim to meet students where they are regarding their emotional, intellectual, and logistical needs. I offer support through multiple channels: office hours, discussion sections, asynchronous resources, and clear communication. Whether I'm teaching a lower-division physics course for life science majors or leading a math review for incoming graduate students, I tailor my instruction to student needs while staying true to the rigor of the subject.

Ultimately, my goal is to help students develop confidence in their ability to learn and to share my appreciation for the physics and mathematics that describe our world. I want students to walk away from my class not only with knowledge, but with a sense of empowerment and a readiness to ask questions, tackle problems, and contribute meaningfully to the world around them.