

# Teaching Philosophy Statement

Sergio Chaves

Since I was in high school, I was passionate about mathematics, yet not only about learning and applying new tools everyday. I was eager for helping my classmates to go throughout their difficulties to success in class. I remember my professor back then saying: *“you are able to understand a topic whenever you are able to explain it to others and help them learn”*. This philosophy has been a basis to build my career up to the current point where I am now: finding a balance between researching and teaching, and these two pillars interconnect with each other driving me to be in a constant professional development, from deciding to pursue a Math major towards finishing a doctorate degree. I characterize myself by my enthusiasm and dedication when researching in mathematics, giving engaging lectures, preparing and designing assessments, interacting with students and leaving a lasting effect on their learning experience.

My teaching philosophy has been shaped throughout my years of experience as student, teaching assistant and instructor. Performing all roles in the learning process such as listening and imparting lectures, preparing handouts, presentations, assignments and exams, interacting with students in one-to-one and group situations, designing questions and implementing innovative technological tools have challenged me in being in constant seek for developing and growing professional opportunities to contribute to the educational landscape that allows students to have genuine experiences in their personal and professional formation.

Throughout my career, I have had the opportunity to work with a diversity class of students. I have been fortunate to interact with students within a huge range of ages, socio-economic and academic backgrounds, and full-time/part-time status. These interactions have opened my eyes to the important role of the instructor in the learning process of each person: *even though any student’s learning requires specific approaches, understanding the common problems and biases towards mathematics allow me to model my teaching style in the most beneficial way*; providing meaningful lectures, reading material and assessments for the students to succeed. My goal as a teacher is that students not only succeed during the course, but also that they obtain an useful insight of mathematics for their particular interests.

I have realized that many students share a similar mindset about mathematics in general: *Mathematics is a hard subject in nature*, and it is only meant to genius or brilliant

students. *Mathematics is useless* unless one wants to become a scientist and most of the things assessed in the class will not be used in “real life”. *Mathematics is uninteresting and boring*, it is abstract and the deeper mathematics becomes, the harder is to relate and apply it. Therefore, my teaching philosophy stands on fighting against these stereotypes against mathematics. Sharing the awareness of the world’s need for people who estimate, verify, support, interpret results and connect with other’s ideas are the pillars that drive my career and have lead me to the teacher that I currently am.

I believe that **Mathematics is a feasible subject** that everyone is capable of achieving any level of understanding with the right guidance. I admit in front of my students that it might not be an easy subject, I share stories of my struggles as student and I make them feel that making mistakes is not wrong. I try to select problems carefully that leads student to fully analyze and appraise theorems and results discussed in lectures; always considering an accessible level for everyone in the course. Since I was a teaching assistant, I have gathered the most common mistakes made by students in the tests or assignments, I discussed with them where is the root of the problem, because there are even some voids from high-school or previous courses that need to be filled. I usually do a survey at the beginning of class to gather people’s previous knowledge and expectations for the particular course; this survey can be presented also with a small problem set to keep track of those topics that need to be addressed beforehand. Once I collect this information, I suggest readings, problems and online material for people to keep up. I am more than happy to devote extra teaching sessions or office hours to help as most students as I can for them to catch up. *I support the idea that learning mathematics depends on student’s opportunities, experiences and effort, and not in a innate intelligence.* I am a fierce supporter of the premise that all students are capable of participating and achieving in mathematics, and every single one deserves support to reach to the highest levels.

I work for presenting **Mathematics as a useful subject**. Even though many students will not compute an integral or apply the fundamental theorem of algebra on a instance of their future; I point out how mathematics enhances the ability to think rationally and to clearly organize ideas which leads to practical applications. I share my passion about Mathematics in the classroom, I show enthusiastically the endless implications and purposes of the particular topics that are being covered. I also refer to mathematical facts as artwork; and that in fact, mathematics is another form of art to appraise. I like to raise the analogy of this subject with other forms of art to my students: not all people like art paintings, sculptures or literature, but they do agree that this is some form of natural human expression; and Mathematics is not far from that premise: *it is the natural language that the universe uses to manifest among us.*

I make of **Mathematics a lively and exciting subject**. I base my teaching methods, style and tactics on encouraging students to adopt a growth mindset, to see mathematics as a subject of beauty and creativity in which anyone can thrive, where speed is not relevant, but depth it is. I point out that the journey to an answer can be as important

as the destination, and I adopt an approach where sense-making matters more than memorization. I make use of technological tools to help learner's experience, I discuss examples in class, showing problem-solving techniques, and making mistakes, getting stuck, and trying different strategies as normal steps in the normal process of learning. *These joint uses of the theoretical with the practical mindset, the traditional lectures with active-learning classroom strategies bring mathematics to light as a gratifying and pleasant subject among students.*

As a final point, I completely perceive teaching as a process that goes beyond the classroom; it is a whole compendium of preparation, experience, motivation and philosophy that end up on the student's mindset towards the subject. I regard teaching as an essential stage of learning and forming character; and I am in a constant professional development to enhance the learner experience, I am always open to new learning opportunities, to work and discussing with colleagues across different disciplines, to receive feedback from colleagues and students, committed to student's goals and needs and to foster a collaborative environment in the classroom, institution and the community.