Teaching Background

I have taught mathematics in various capacities in the last decade, viz. as an instructor, as a tutor and also as an assistant. I have taught mathematics to a diverse group of students, viz., as a lecturer of advanced calculus to engineering students, as a lecturer of statistics to nursing graduates and also as a tutor to senior (final) year high school students preparing for their advanced placements examinations at the beginning of their university programs. I have taught various topics in mathematics, viz. vector calculus, statistics and probability, linear algebra and differential equations, to name a few. I have developed course content for vector calculus for the class I taught in summer 2010 (lecture notes available on request) and also mathematical lab projects for engineering students (available upon request). I have taught both in a university setting and a community college, besides tutoring in high school. I have also thought quite a bit about programming mathematics learning into video games and have had extensive discussions on this topic with experts in educational technology.

Teaching Philosophy

From my above experiences, I have come to infer the following keys to teaching mathematics, or for that matter, any science subject.

- ***Make math relevant***: I have found that when students are able to relate to the subject being taught in their day to day lives, they take greater interest in the learning process. Nothing beats an attentive class to start with.
- ***Make math fun***: Most creative and professional achievements are accomplished when it is *fun* to do what we do. I have made immense effort to make my lectures fun by introducing a problem as an open discussion, kneading a story around concepts being taught, challenging the minds of the taught by making them free to express their approach to a problem before laying down a set rule. I often try to approach math teaching as a path to discovering something, so students can enjoy the journey to solve the problem rather than the goal of arriving at an answer.
- ***Make math an art***: Rather than memorizing a bunch of formulae to arrive at an answer, I have found that when students appreciate math learning as a form of art, they take greater interest in the subject than otherwise. Simple techniques and concepts must be emphasized over digging into long convoluted theorems, eg., in several applied problems, exploiting symmetries in the mathematical formulation helps circumvent lengthy algebraic calculations. The spirit of simplicity and elegance in mathematical steps must be emphasized in math education, something I attempt to adhere to in my lectures.

List of math courses taught

1. Advanced vector calculus (lectured twice to undergraduates and also created lecture notes in LaTeX).
2. Engineering calculus (lectured thrice to undergraduates).
3. Differential equations and linear algebra (lectured thrice to undergraduates).
4. Probability and Statistics (lectured once to nursing graduates).
5. Clifford algebra (lectured once as a special topics course to advanced scientists and researchers).

Testimonial

See following page for a testimonial by the head of the department of mathematics at Front Range Community College, Westminster, Colorado, USA.

See you all in the classroom!

Amrik Sen
Summer 2017.

FRONT RANGE
COMMUNITY COLLEGE

May 5, 2014

Dr. Say-Peng Lim (say.peng.lim@csun.edu)
Chair, Department of Physics and Astronomy
California State University Northridge
18111 Nordhoff St.
Northridge, CA 91330-8268

Dr. Say-Peng Lim

Amrik Sen has asked me to write him a letter of recommendation. I gladly do so. I hired Amrik to teach part-time at Front Range Community College (June 2010 – December 2010). He taught our Statistics course and our Calculus I course.

From watching his teaching demonstration during his interview to watching him teach Statistics and Calculus, I was very impressed with Amrik. He is a natural-born teacher. He knows how to connect to students. He explains concepts by first telling students a story that will help them understand the bigger concept. Then, after he begins teaching the nitty-gritty details, he is very clear and organized. Students LOVE him!

I was really sad to lose Amrik as an instructor when he needed to spend more time in graduate school. I knew that I could trust him with any class of any students. He will be a great asset to your department. I highly recommend you hire Amrik Sen. Please contact me if you would like to further discuss Amrik.

Respectfully,

Monica Geist

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