

Teaching statement

Aleksandrs Mihailovs

Alec@Mihailovs.com

<http://webpages.shepherd.edu/amihailo/>

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I like teaching. My mother was a math teacher, so it is like our family profession. I started to teach when I was studying at the Moscow State University in the 70's. My first class was Calculus I in the famous Moscow mathematical high school No.57. A lot of International Mathematical Olympiad winners and a series of simply good mathematicians came from there. My work there was supervised by Nikolai Nikolaevich Konstantinov, the well-known initiator and organizer of mathematical olympiads and mathematical schools in Russia. Later he was one of the founders of the Mathematical College of the Independent Moscow University.

One of his main ideas on how to teach mathematics was that the teaching process must be based on doing mathematics instead of studying a textbook, memorizing formulas etc. We prepared a series of handouts with calculus problems and gave them to the students. They were supposed to solve all of them either at school or home, and then tell me the solution (instead of writing it), and answer all my questions clarifying the solution. This method has proven to be very effective for work with talented and especially selected students. I don't use it now though since students in America expect more from their professor than simply giving them the problems and then waiting for their solutions.

Coming to America in 1996 to complete my PhD at the University of Pennsylvania, I started to teach as a Teaching Assistant at UPenn. I worked as a TA for Herman Gluck (Geometric Analysis & Topology, Math 600, a graduate course), Stephen Shatz (Algebra, Math 602, a graduate course), David Shale (Advanced Engineering Mathematics), and graded student works for the Number Theory, Calculus III and Intro to Math courses. My work with David Shale was the most important for me and I learned a great deal from him. He found a teaching approach so effective that more than 80% of our students got A's on the Department's final exam. I am trying to use as much from his teaching technique as I can, and it benefits me, as well.

After completing my PhD at the University of Pennsylvania in May, 1998, I taught a summer course of Advanced Engineering Mathematics there. It was a rather challenging course grouping Calculus III, Differential Equation and Linear Algebra together. All of my students but one were very successful and got A's. The unlucky one still got 89 out of 100 on the final exam and earned a B.

During the 1998–1999 academic year, I taught at the SUNY College in Oneonta. I taught a vast variety of courses there: Introduction to Computing Technology, Introduction to Mathematical Thought, Calculus I, II, Elementary Differential Equations, and Topics in Differential Geometry (Math 637, a graduate course).

Since 1999 I am working at Shepherd College. I taught Introduction to Mathematics, College Algebra, Finite Mathematics, Discrete Mathematics, Calculus I, II, III, Differential Equations, Abstract Algebra, Numerical Analysis, Statistics, Probability and Statistics, Digital Logic Design, Senior Capstone Practicum, and Seminar in Problem Solving. Organized local sessions of Virginia Tech Math Contest and Putnam. Run Shepherd College Problem of the Week and Shepherd College Math Contest for High School Students. Last 3 years was a member of the Shepherd College Faculty Senate, 2 years the chair of the

Shepherd College Computing Services Committee, and a member of the Shepherd College Technology Oversight Committee.

In the University of Pennsylvania and also in Oneonta and at Shepherd, I used Maple in all my classes except Intro to Math at Shepherd (for some technical reasons). It is a requirement and Maple makes studying more interesting as well. My Maple manual for Abstract Algebra course became a supplement to the textbook we used. I have home pages for all my classes where I put a syllabus, homework problems, tests, announcements and some additional material like Maple programs and Java applets written by me. See <http://webpages.shepherd.edu/amihailo/maple.asp> , for instance.

I am always trying to make studying more interesting. We believe mathematics is not a tedious and complicated thing, that is why we chose it as our specialty. I am trying to show my students that mathematics is beautiful and interesting. That's why I don't think that we are spending useless time when I am talking to them about biographies of mathematicians, the general atmosphere, etc. I don't hesitate to repeat some things that some of them already know, probably, like Möbius Band, Fibonacci numbers, Catalan numbers, Golden ratio etc. We listen to music generated by π and e and so on.

Student evaluations have demonstrated that the students like such an approach to mathematics. The average rating for all of the questions related to my courses was usually from 4.7 to 5.0 (on a scale from 1 to 5).