Teaching Statement

Mathematics teaching and learning has been the predominant theme of my life. I have been teaching mathematics for the past ten years. I have taught over a dozen courses ranging from undergraduate calculus to Theoretical Computer Science at master's level . I enjoy the different aspects of teaching, whether it is expounding the rudiments of finite mathematics to freshmen or propounding my mathematical cogitations at research level seminar.

I have honed my teaching skills over the past ten years. At the U of I, my ICES ratings have been steadily improving, with ratings between 4.0 and 4.6. In Fall of 2003, and Spring of 2006 I was included in the *Directory of Incomplete Lists of Teachers Ranked as Excellent* for teaching Math 225 and Math 124 respectively.

Students who come to my class expecting to just sit back and take notes are in for a surprise. I do not believe in pouring out pages of information, while the students copy them from the black board on to their note books with out factoring through their mental faculty. My lectures are not a time when I talk and students listen. I try to make my class very interactive by asking a lot of questions.

I make it a point to memorize the names of all the students, even their last names when there is more than one student with the same name, at least by the end of the second week of class. Knowing the names of my students helps me make the class more interactive. I call out the name of the student and ask the question. If the student cannot answer, I make it a point to explain it so that the student understands. I make a conscious effort not to pick on weak students. Almost every student gets quizzed during the course of a class. Moreover this method of intermittently quizzing prevents them from " Switching Off". I believe that when the teacher knows the name of the student, the student takes more active interest in class, makes a genuine attempt at learning and are more comfortable with the teacher and feels encouraged to ask questions.

I always make it a point to get to class at least ten minutes before the lecture starts. I spend this time writing on one corner of the board the formulas or the main theorems that have been covered in the last class and the ones that will be covered in class on that particular day. I believe that repetition is usually essential for students to grasp a concept. Hence I spend the first five minutes in reviewing. Sometimes I begin the class with a quizz which is not graded. I give the class a question, very

simple though, yet subtle from the previous lesson and ask them to write the answer on their note book and then exchange it with their neighbour to be evaluated. I believe this method of peer evaluation makes them less scared to think and more open to learning. At the beginning of the class I write the main concept or the main formula on the board and tell the students " If there is one thing that you should get out of today's class , it is this". Hence even the least attentive student does not leave the class empty headed.

I believe the best way to understand a theorem or a formula in mathematics, whether at elementary level or research level is to look at examples. In fact a good researcher always has a good stock of examples to look at and then conjecture theorems out of it. After teaching them a theorem or a formula I always give them a lot of examples. I solve a problem, and then to drive the point home, I give them a very similar problem and ask the entire class to do it by themselves. Sometimes I even make the students come on to the board and present their work to the class. This helps them over come their shyness of presenting to an audience and overcome board phobia.

I constantly e-mail my students and remind them of the deadlines in the up coming on-line quizzes/homeworks, exams etc. I also send out e-mails, especially to those students who are not doing very well, making them aware of their performance and letting them know of their options, either to drop the class before the deadline or to start putting more time and effort in to the course. I provide the students with histogram showing the perfomance of the entire class and also give the mean and the median of the class for the students to gauge their perfomance and get an idea of where they stand in the class, after every quizz and exam. While handing back the graded answer sheets I give them the solutions and also write encouraging comments. I regularly give hand outs of definitions, formulae, algorithms, practice problems for an upcoming exam etc. I somtimes hand out work sheets to be done in class.

When I attend a course, I would feel more close to professors who are accessible. I believe as a teacher I should be very accessible to the students. Hence I have office hours several hours every week. I encourage students to come to my office hours.

I believe in the dictum that **"The best teacher is the one who teaches you to think"**. Whenever a student asks me a question, instead of giving them the complete answer, I would give them suggestive hints and gentle nudge in the right direction which helps them discover the solution themselves. This I believe improves

their self-esteem and increases their curiosity in the subject.

I always prepare lectures and work out all the examples that I am going to cover in the class. This makes me confident and I believe a confident instructor can instill confidence amongst the students to solve problems. I also prepare the questions in advance. I always make it a point to hand out practise problems for the quizzes, and exams. I also hand out a sheet of all the formulas which will be useful for the exam.

Finally I think that teaching is a privileged position that demands humility and mutual respect. Whenever a student has difficulty in understanding even the most basic concepts, I try to think how I would struggle to understand advanced concepts in mathematics. Hence I can empathize with the student and be more sympathetic and respectful.

"To Teach is to learn Twice". I enjoy teaching and I am dedicated to improving and refining my skills. I believe that teaching is a vital and exciting part of being a mathematician.

I do not remember the ICES scores of the following courses. Calculus 230 in the Fall of 1999 and 242 in the Spring of 2000. I was a research assistant untill Fall 2003 and I did not teach in the Spring of 2004.

ICES Scores

1. 4.3 in Fall 2003 (Math 225)
2. 4.1 in Fall 2004 (Math 225)
3. 4.2 in Spring 2005 (Math 124)
4. 4.0 in Fall 2005 (Math 118)