

# Teaching Statement

Pritam Majumder

I believe teaching is not only a way to help others educate but also a very good method for educating oneself. By teaching a topic to others one can gain much more firm understanding of the concept. Teaching can be useful for teachers in the following ways: (1) Teaching new topics helps the teacher to learn new topics (2) Teaching same topic (with variations) several times helps teacher to remember these topics. I keep interest in teaching in not only in my area of expertise but also in areas outside of my research. I believe this way I can acquire broader understanding of the field and may even become helpful in my own research. Moreover, I consider teaching to be a way of interaction between students and the teacher which I believe becomes beneficial to both parties.

I think ‘examples’ are very important while teaching a general concept. I prefer to start with a few examples as a motivation, then introduce the general concept, and then give more examples to help students understand and appreciate the general concept. I think it is important to start with a small prototype example (preferably with a picture) before any definitions, theorems, etc. and relate those with that example. I think it is important to give as many examples as possible after stating theorems, definitions etc.

Regarding proofs of theorems etc., I believe it is important to give the main ideas and insights (which are most often not explicitly stated in most text-books) of the proof, preferably relating with an example, rather than presenting the proof in a formal logical fashion (as given in most papers/text-books). I think it is important to leave out something without proofs, e.g. some easy ones should be left to the reader as exercise and the more technical/dry ones as separate readings. I like to state it clearly (as e.g. ‘facts’) if I am taking a result for granted without proof and using it, so that no confusion arises. Whenever possible, I try to convince the audience why they should believe the ‘facts’ (preferably with examples).

I consider homework and projects to be more important parts of a course than exams. I believe by doing sufficient homework exercises students get a better understanding of the lecture content and projects help students to know about related interesting topics outside of the course material which may create an interest in them to pursue research in the field.

I have tried to follow the above principles during most of my teaching. In TIFR students seminar I have given several talks on broad range of topics, where I think these principles have been quite successful.