

## Personal Statement of Teaching for Mark S. Sherriff

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Teaching is something that I firmly believe is not tied specifically to the classroom. During my time in academia, I have found many more teaching scenarios outside of the regular course schedule of a college student: in the lab, the professor's office, the cafeteria, social club lounges, and even at sporting events. This is probably why I believe that, as a teacher, it is not just my responsibility to provide a lecture two to three times a week. Above that, there have to be ideas, projects, questions, and concerns that extend past the standard course setting.

My goal is to create learning experiences that engage the student both in and out of the classroom. Students should come to class, learn something new, work with their classmates to form a better picture of the concept in their mind, and then find places in their life where the ideas are real and apparent. I have found that in the field of computer science, even the most abstract theory can be made more concrete via real world examples and analogies.

While my teaching interests and abilities lie primarily in the area of software engineering, I feel that I am prepared to a variety of courses. At the undergraduate level, I would be interested in teaching software engineering in any form, whether it is a survey of the area or a more specialized topic, such as courses in software testing and security or agile software development. I would also welcome the challenge of teaching similar courses at the graduate level, especially a course in software reliability. I am also interested in teaching courses in lower-level computer science courses. It is in these early undergraduate courses that we have the opportunity to draw in new students to the discipline and I feel that the experience as a student at both a small, private university and a large, public university will aid me in designing courses for either environment to improve the retention of these students.

I gained a great deal of experience in teaching Database Management Systems at NC State University. To date, I have designed and have been the primary instructor for four classes of Database Management Systems<sup>1</sup>. Thus, I have been teaching every summer during my graduate studies. For this class, I was assigned my own teaching assistant, so I have experience in working with others to teach my curriculum. I myself have also been a graduate teaching assistant at NCSU for four semesters of Software Engineering. These teaching opportunities have been an invaluable experience, and have reinforced for me that my career should be in academia.

After I taught the database course for the first time, I had the opportunity to take a graduate-level "Teaching for College" course. This course helped me see everything that I had done correctly, incorrectly, and what needed improving. The value gained from this course was immeasurable, as I feel much better prepared to create new courses and to improve on existing courses. I firmly believe that professors at universities need to take advantage of opportunities that help prepare them to teach as much as any instructor in the earlier grade levels.

I feel that one of my greatest assets is my ability to teach in the classroom. My teaching evaluation scores have routinely been higher than the department averages and goals in nearly every category. These categories include my enthusiasm for teaching, my course effectiveness, and whether the student would recommend me to other students. Comments from students included with these evaluations have indicated to me that students appreciate my teaching style and would enjoy taking courses from me again. I am fortunate to have been able to learn from exceptional instructors, and I have tried to incorporate their various teaching styles into my own. I strongly believe in the strengths of problem-based learning, especially in a field such as computer science. I continually try to involve the class in every activity via active learning techniques, as opposed to having a strictly lecture-based class.

As a software engineer, I have been taught to learn, analyze, apply, and teach various software development methodologies and processes. In some ways, the ideas also hold for my teaching. When studying processes and making decisions as to which one would work for a given scenario, a software engineer has to look at everything from the personality of the development team, to expertise levels, to customer requirements. With teaching, I look at these same concepts, but in relation to my classes. A class can never be taught in exactly the same way as a previous one because the field is always changing. New techniques, technologies, and theories are constantly being introduced. Also, more mundane changes such

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<sup>1</sup> My most recent Database Management Systems course website is online at <http://arches.csc.ncsu.edu/csc440>

as semester, a new textbook, or a different make up of students affect how the class must be taught. I approach every class as a new opportunity and a new challenge, finding the right “process” to facilitate learning in my students.

I believe it is more important to learn how to develop good programs and algorithms, rather than how to program specifically in Java or C++. In ten years, these languages could well be falling behind as more powerful languages are developed, but students who have learned how to develop programs in general will have a much easier time adjusting to a new set of commands than a student who only knows what certain aspects of a language do.

I try to make the material as applicable to a student’s current life as possible. For example, I like to use fairly large programming projects as a vehicle for learning. However, I prefer to let my students decide exactly what the nature of their project will be and what technology they wish to use. In my Database Management course, the students create a well-designed database and a front-end system to interface with it. They can choose the domain for the application, as long as they meet certain technological criteria. Through this project, not only did the students learn the technology, they also had the opportunity to create systems that were useful to non-profit organizations that they belong to, their businesses, and their personal use. I feel that this freedom of choice increases their personal motivation to put forth more effort on the project and can help them understand that real projects are not just about programming, but about helping others to get a job done.

Another concept that I think is important is the ability to read and analyze professional papers and journals. Whether a computer scientist is working in industry or in academia, the ability to read and critique literature is useful, especially as new technology and theories are being discovered. To aid students with this aspect of learning, I plan to incorporate a reading portion of my courses. Each week, students will read, analyze, and report on various papers in the field, helping their classmates to understand the important points from the reading. Through this method, all students receive the benefit of numerous papers, with only having to present the material once or twice during the semester.

The computer science field is becoming much more diverse, with new students of various backgrounds and age groups. People are turning to computer-related fields for opportunities to start their career in a growing area, jump-start their current career, or just out of curiosity. Some students will come in ready to learn, while others want to get in and out as fast as possible so they can move on with their careers. These different approaches, backgrounds, and motivations create an interesting environment in which to teach. I try to teach my classes to reach all of the students in my class, not just those who are there for reasons that are more in line with my thinking.

Through my experiences as an instructor, teaching assistant, and through my academic work, I am confident that I am an effective instructor in the field of computer science. I have wanted to teach from early on in my academic career and have been preparing myself so that when I was presented with the opportunity to teach at NCSU almost four years ago, I was able to begin immediately. I sincerely enjoy everything that goes into preparing and conducting a course, especially interacting with students. My goal is to always be an effective, energetic instructor that students want to take courses from because they not only enjoyed the class, but because they also learned a great deal. A student that respects an instructor enough to want to continue learning from him or her is one of the greatest compliments I feel I could receive.

(Teaching evaluations, student comments, and teaching portfolio available upon request.)