

# STATEMENT OF TEACHING PHILOSOPHY

OLAKUNLE B. ESO

The classroom should be an environment that fosters learning and promotes knowledge for every student. During my undergraduate and post graduate career, the most productive and most memorable classes I completed were those that encouraged discussion and related complex engineering principles to situations that we would experience outside of the classroom. Oftentimes, engineering ideas are perceived as complex by students; however, these complex ideas are a supposition of many simple principles, which with suitable guidance, students can begin to relate these simple principles in a complex framework. My teaching style is governed by three main creeds: 1) focus on the guiding first principles of complex idea to facilitate learning, 2) encourage student participation through projects and discussions which have actual and practical consequences, 3) help students become critical thinkers and learners by focusing on the what, why and how of problems and concepts.

In many of the classes I taught as a graduate student I noticed many students overlooked the significance of the basic theoretical foundations that they were introduced to in previous prerequisite classes. Because of this, I construct my lessons to include refreshers of these basic principles. It is sometimes the case that students haven't been introduced to certain concepts so it is important to have flexibility while teaching so that additional time can be given to these basic concepts. I always tell my students that the goal of each course they take is not the ability to cover the most material, though it is desired, but to ensure that they have the best understanding.

Just as there are different teaching styles, there are also different learning styles and it is critical to know your audience as a teacher. Some students are better at theory while others learn through application of concepts. This is why group projects are an essential part of my teaching style. Projects are assigned as a semester-long endeavor with monthly milestones that break up a complex problem into smaller pieces so as not to overwhelm students. Projects such as these allow students to apply theory to practical problems. In these projects, an emphasis is placed not so much on the final result but on the thought process that led to the final result. Using this approach, students come to understand and easily correct their mistakes. I also incorporate reports and presentation as part of the project to improve students' oral and written communication skills. Reports focus on the theoretical framework and methodology of the student's solutions while presentations are encouraged to be more about the big picture and importance of a solution rather than the technical details. I foster discussion through weekly activities that divide students into small groups where they tackle a simple design problem that uses the concepts taught throughout the previous week(s). Each student within the group is asked to make one contribution to the design to facilitate participation. These group designs are sometimes tied to the larger semester project(s) as a way of encouraging participation.

Critical thinking is a tool every engineering student must develop. Without this important skill, engineers will not be able to solve new and challenging problems. I encourage my students to consider the three questions to ask when presented with a problem: what is the problem, why is the problem important and how will it be solved. I have incorporated this approach in my teaching to encourage students to think about problems not just as something requiring a solution, but as something that requires a critical thought process. My assessments reflect this approach as they discourage memorization and regurgitation of formulas and equations, but instead encourage the what, why, and how thought processes.

As a teacher in the field of electrical engineering and signal processing, I believe the greatest responsibility I have is the perpetuation of the field through mentorship of students who someday will extend its body of knowledge. Teaching allows me to promote the discipline to which I have devoted a significant portion of my life, and to show people the beauty and elegance of electrical engineering.