

Statement of Teaching Philosophy and Experiences

By Monther Aldwairi

My experiences as an assistant professor and teaching assistant have helped me form a certain view about the learning process and the teacher's role in it. This is a personal statement of teaching philosophy that expresses my views about the teacher's role, teaching methods and how student of different levels learn and interact with the teacher. This is a living document, a working document that continues to change as my teaching experiences grow and my methods evolve.

I spent a considerable amount of time learning and teaching, I also had the opportunity to work for leading Tech companies. I learned by experience the importance of having the students interested and motivated to learn. It's my role as a teacher to get the students attention and keep them interested, if they are not motivated or they lose interest, all teaching methods will fail. This is especially true in the case of low level foundation classes taken in the first two years of college. Many students wonder why they are being forced to take such abstract classes, such as differential equations or programming for non-native programmers. It is very important to explain to the students the objectives of the classes and how are they useful in their future studies and practical life. In this case, it is imperative to use real life examples and applications from the student's background to show how this class can be useful in their future careers.

In an Introductory programming class for medical, nursing and pharmacy students, I tried to get them interested by explaining how it is going be absolutely necessarily for anyone from any field to be able to use computers and understand how to program it. I used the analogy of a secretary, and how important for her to command a word processing application, which was not the case 30 years ago. In the same manner, medical students need to be aware of how medical devices work and how are they are interfaced to a computer. I designed the programming projects and assignments to reflect problems that face doctors and nurses in their daily lives.

Teaching Methods

I earned my bachelor degree from Jordan University of Science and Technology and my graduate degrees from North Carolina State University. From my diverse experience and the different number of scholars I learned under, I can classify the teaching methods currently in place into:

1. *Spoon feeding.* The professor walks into the classroom, turns his back to the students and fills the blackboard with definitions, equations, diagrams, code, etc... The students copy whatever the professor writes and there is minimal discussion or interaction.
2. *Nap time.* When the classroom is air-conditioned and equipped with a PC and a high tech theatric projector! The professor walks into the class room turn off the lights and starts reading from the slides. Dim lights, cool breeze, fixed tone voice makes the perfect conditions for the tired students to take an afternoon nap.

I try not to copy any of the above examples. I try to find a balance between instructing, discussion, and research. I believe strongly in engaging the students in the lecturing and idea research. My teaching methodology

changes according to the class and the student's level. When teaching lower level students, I have taken particular interest in their individual study habits and knowledge about the institution's resources. Often times new students are not aware of the vast resources available on campus: online class website, forums, review questions, office hours, TAs, Labs, peer tutoring, email, etc. I keep my email and phone public and strongly advertise my office hours to make the students comfortable in seeking my help when they have problems. When I receive visitors I try answer their questions, motivate them and assure them that the issues they face are normal. This informal environment allows me to build trust and open dialogue with my students.

Advanced students get a different treatment. I explain most of the concepts through questions: How would you do that? How would you solve this problem? What are the disadvantages of this technique? How can we improve this algorithm? I discuss and write the students' answers and try relate the answers to the new concept or technology I am about to introduce. This keeps the students on alert, they could be the next person to answer a question or step to the blackboard. This motivates them to keep up with the material and prepare before classes. I also find this very important in making the concepts and ideas stick! The students find it easier to remember during the exams and future lectures if they answered the question on the board. I had one of the students triple his score in the second exam just by putting him on the spot and asking him more questions during the lecture.

I believe in hard work. I assign elaborate projects in order to guarantee hands-on experimentation. In a systems programming class, I give four large scale projects (5000+ lines of code) to build a processor simulator, assembler, macro processor, loader linker and integrate them together. The students are required to submit a full design, documentation and test plans. The amount of questions I get is huge because the students run into real issues, in the projects, that they might've not faced otherwise. I create a discussion forum to answer the students' questions and for peer discussion. In senior year and graduate level classes I find it very useful to let the students give short speeches to improve their public speaking skills. Industry guest speakers are invited to lecture on the most recent technologies, packages and tools. The term projects at this level are either initiated by private companies, part of a national or international competition or novel and genuine research idea suggested by the students.

As a faculty member, I plan to engage students in research projects that will use the knowledge they acquired in class, and show them the tools and methods available to researchers. I plan to build tight relationships with the private sector and to have the student evolve in joint academic and industry environment. My overall goal is to jumpstart research at the undergraduate level, equip young researchers with the tools and knowledge to innovate and to create healthy environment to foster startups. I enjoy professing and I prepare my graduates with the skills to excel at Google, Microsoft, CISCO, or Apple.

Detailed Teaching Experience

Jordan Univ. of Science and Technology 2007-present

Computer Engineering/ Network Engineering and Security Departments
Assistant Professor (tenure application under processing)

CS116: Selected Programming Languages Visual Basic 6.0

CS215: Selected Programming Languages Visual Basic .NET

Those classes are course aimed to introduce students to programming languages. Visual Basic and VB. NET are the perfect starting point for newbie's. The topics range from the fundamentals of programming in Visual Basic

(Objects, Events, Numbers, Strings, Input/output, Built-In Functions), Decisions structures (If and Select Case Blocks), Repetition structure (Do-loops and for-next loops), Debugging strategies, Procedures and Functions, Arrays, Sequential, Random Access files, SQL and ADO.NET.

I've taught two sections averaging 50 students each, over the course of 16 weeks semesters. I developed a course curriculum, prepared and delivered lectures and developed a full website with all the needed tools. I was also the coordinator for 20 sections, which includes scheduling exams, Labs, Assignments and TAs.

CPE 471: Systems Software Design, Development, and Documentation

This is a senior course covers the design and implementation of various system software components including assembler, macro processor, and loader. In addition, the course teaches modern software engineering practices and multi-person projects skills, such as requirements specification, design, implementation, verification, and maintenance of large software systems. In addition to, advanced software development techniques and large project management approaches, project planning, scheduling, resource management, and documentation with special emphasis on technical writing.

CPE231	Digital Logic Design
CPE253	Digital Logic Design Lab
CPE 352	Computer Architecture
NES 201	Communication Skills
CPE 776	Advanced Network Security
CPE 780	Master Seminar
CPE 779	Special Topics in Computer Engineering

New York Institute of Technology (NYIT)

Adjunct Professor of Computer Engineering

INCS 741	Cryptography
INCS 745	Intrusion Detection Systems and Hacker Exploits

North Carolina State University 2000–2007

Teaching Assistant

ECE 520	Digital ASIC Design
ECE 704	Design for Testability

ARAMEX International 1998-2000

Technology Integration Engineer

MCSE Technical Training
System Administration and Help Desk Training
MS Back Office Servers Training
MS Visual Studio and ASP Training
AXIS Training
Freight2000 Training