Teaching Philosophy and Expectations in Scmp 118

The teaching method of Professor Aydin is based on the following pedagogical principles.

- **Active engagement:** Knowledge cannot be transferred from one mind to another. Rather, it is *constructed by the learner which requires serious effort and active engagement.* The role of the teacher is to help the learner construct new knowledge. The teacher cannot simply insert the knowledge to the minds of the students. If this was the case the business of education would have been much easier! This idea is expressed in the saying *the one who does the work does the learning.* There is no short-cut!

- **Study Regularly:** Deep learning is achieved only by *active engagement* and regular study. Native ability and talent matters to some extend but *working regularly* is the most important factor in learning something deeply. Therefore, I expect you to work on programming most everyday. An age-old wisdom tells us that *the best of deeds is that which is done consistently even if it is small amount.* Research in neuroscience has shown that trying to learn a lot of material in a short period of time before an exam is not a healthy way of learning. Rather, *to learn something well, practice over an extended period of time is needed.* So, please study regularly and do not plan on learning the material by cramming before the exams.

- *Learning is a life-long process.* It should NOT stop after receiving your degree or diploma. You want to acquire valuable skills that will be useful to you in the rest of your life such as critical thinking, self-discipline, problem solving, critical examination of a proposed solution, not giving up easily when faced with challenging problems, communication and presentation skills. POGIL activities are designed to help you develop and fortify these skills. You should be fully engaged to benefit them.

- **Learning from multiple sources.** Professors are not the only source of knowledge. You should be able to learn from books, articles, your fellow students, online materials, and a variety of other sources as well. One of the best ways to learn something is by teaching it. You will have opportunities to present solutions to exercises in class. Volunteer to present your solutions. Discussing the material with your classmates will help you better understand it. Research shows students who work in groups do better. Therefore, I highly recommend that you form small *study groups*. In real life, you will most likely be required to work in a team.

- **Learning not confined to the classroom.** Most of what one learns happens outside of a formal classroom. Activities outside the class that help you learn include: reading the textbook, doing homework problems, preparing for in-class discussions, discussing problems/material with your classmates, discussing problems/material with your professor in his office. Ask questions in and outside the class.

- Computer programming is one of the most useful aspects of modern life. It is a challenging subject. Hard-work and good attitude is needed to meet the challenge. I am here to help. Take advantage of all the resources available.

- *Visiting me during office hours* will be an essential part of learning in this course. I encourage each one you to come see me regularly. I am here to help you and I cannot do that if you do not make an effort.

- *Attitude is everything!* Be positive, active, pro-active, responsible and motivated.

- The real goal of education is not making good grades and earning a diploma. These are lesser goals compared to the higher goals of developing critical thinking and communication skills and other mind-strengthening abilities. Hope this course will be life changing experience for you!

- Some books I highly recommend (that discuss these ideas and more)

    - The new science of learning, by T. Doyle and T. Zakrajsek, Stylus Publishing 2013.
    - The 5 elements of effective thinking, by E. B. Burger and M. Starbird, Princeton U Press, 2012.
    - How Learning Works, 7 Research-Based Principles, Ambrose et al, Jossey-Bass, 2010