

Teaching Statement

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In addition to my fulltime duties as a research scientist, I typically teach two 16-week semester Geoscientific computing courses per year. In keeping this schedule, I am keenly aware of the time value invested by students, visiting scientists, and faculty attending my courses. For this reason, I keep four questions in mind while teaching, developing lectures and exams, or sitting with an individual in my office: Am I clear and concise? Am I developing students to be critical thinkers? Am I engaging students in problem solving? Is my approach working? These questions help me focus on increasing a student's knowledge of the subject and skills as a learner.

I find that speaking and writing clearly and concisely will maximize the likelihood for course success. This is particularly true because students spend considerable time and effort trying to understand the many concepts associated with geoscientific computing. In addition to concepts, I believe in providing clear and concise expectations. Toward that end, I provide a course syllabus that includes an overview, goal, objectives, learning outcomes, and resources; for example, textbook, supplemental material, presentations, software. In addition, I specify grading and examination expectations, assignment format, late assignments, student responsibilities, classroom policies, instructor contact, college and campus policies, course schedule, and academic policies.

I find that applying best-teaching practices will maximize the likelihood for course success. Specifically, I integrate critical thinking (bringing in outside knowledge and biases) and critical reading (restatement, description, interpretation). The readings I assign typically involve a combination of a textbook and journal articles, some of which are my own. My experience with the e-Education Blackboard platform enables me to connect students this material. For example, using this platform provides me with digital space to put course materials, such as syllabus, lectures (Powerpoint), textbook, papers, spreadsheets, software, data, quizzes, and exams. The on-line calendar facilitates sending notifications and setting expiration of materials, whereas the chatroom (blog) facilitates interaction and record of discussion among students regarding different elements of the course.

I find that engaging students in problem solving will maximize the likelihood for course success. Specifically, I reemphasize critical concepts, provide visual aids (powerpoint presentations and videos), use in-class activities (table top review and group exercises involving short answer, derivations, and calculations using spreadsheets and various models), relate material to student experiences, recognize the importance of vocabulary, treat students with respect, hold students to a high standard, and empower students through self-directed learning.

I find that evaluating if my approach is working will maximize the likelihood for course success. Specifically, I use various assessments (classroom, bias review, knowledge surveys, interviews, portfolio assessments, mid-semester survey, and rubrics). These assessments provide me with information to evaluate the students' grasp of concepts, and my ability to convey core academic concepts and skills. In addition to these assessments, I use group mid-term and final examinations that include individual submissions with scores for team member participation. For some courses, I replace the final exam with projects in which students provide an oral presentation (powerpoint or poster). In this case, students provide a peer review based on criteria provided by me.

In summary, my goal is to teach courses that inspire, motivate, and prepare students to be critical, quantitative, and innovative thinkers. I look forward to realize this goal as a faculty member!