Teaching Approach

My general approach for teaching is based on four aspects, which I believe help students with the conceptual understanding and retention of the course material and create a positive learning environment. These aspects are: **(1)** keeping a focus on the 'big picture', **(2)** understanding the progression of the field and giving historical context, **(3)** encouraging and allowing time for feedback and discussion, and **(4)** real world experiences through data collection and field trips. I have had the opportunity to instruct several courses which focused on a varied range of topics from technical courses such as Remote Sensing Techniques to broad overviews such as Biogeography. I have found success in implementing these four aspects into every course I have taught.

Focusing on the 'Big Picture' – Over the past few decades, there has been an increasing focus on interdisciplinary studies in the natural sciences. While it will always be important to specialize in a particular field of study, today's environmental challenges require an understanding of many interconnected parts, which may span several fields. Teaching a course that moves between disciplines can lead to a scattered series of lectures where students can get lost in the details. In my lectures, I immediately relate a new idea back to the overall theme and explain why this is important to the overall field. It is important to keep in mind that learning comes not from merely knowing a series of facts or ideas, but from understanding how they are connected and form an overall concept.

Understanding Context – I find that students gain perspective on how and why a subject exists by providing historical context. I do this in two ways: first by identifying and giving brief biographical details of the scientist who developed a particular concept, and second, by assigning digestible and formative primary literature which introduces or summarizes said concept. I find that this historical context provides students with an understanding of the intellectual and technological advances that developed the field. It is important to realize that our current state of understanding was mostly incremental and that many theories we take for granted were fiercely opposed and took many years to gain acceptance, like plate tectonics. Finally, I try to link in recent, popular scientific discoveries that are relevant to the subject matter, both in the lecture and as an evolving list of optional readings on my course websites. The addition of these materials not only attracts the students' attention, but also links the sometimes seemingly esoteric concepts to interesting applications.

Encouraging Feedback and Discussion – I have a high expectation of classroom participation for my students. I reserve time at the end of each lecture to discuss how the ideas and themes from the course relate to the students' experiences. I invite the students to find examples from their own lives where the concepts from the course may help explain a process or pattern they have observed. I also take regular breaks during the lecture to explain concepts on the white board. This gives the students the opportunity to ask questions, so I can take their feedback and adjust my figures to better explain the concept at hand.

Importance of Experiences in the Field – During my postdoctoral work, I was invited by the Dean of Undergraduate Education at UC Santa Barbara to give a lecture to the incoming freshman honors students. I was asked to speak on a topic I was passionate about, which would also serve as a valuable lesson for new undergraduates. I told them to take full advantage of courses that include some type of field experience. I try to include a field component in every course I teach, whether it is a multiday camping trip to observe biogeographical patterns, or a single laboratory period to collect unmanned aerial system (drone) imagery or validate satellite retrievals.