



The Role of Plate Tectonic Courses in the Geoscience Undergraduate Curriculum

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Since its development in the 1960's, the concepts of plate tectonics have served as a primary framework for a very broad range of geoscience disciplines. As the new paradigm was being debated and ultimately accepted it was relatively common for focused plate tectonics courses to be included in undergraduate curricula. As plate tectonics became the established framework model for the geosciences, many of its concepts were integrated into sub-disciplinary courses, and general plate tectonics courses for undergraduates tended to disappear. For the majority of undergraduate geoscience majors, they were exposed to some basic plate tectonic concepts (oftentimes the same 2-3 topics in all of their undergraduate courses), and some details important to that specific course, but in general it was a relatively superficial coverage of the underlying framework. This loss of educational content was offset to some degree by the development of upper-level (graduate-level) courses in geodynamics and related topics. However, for students outside of the geophysics side, there were few opportunities to develop a strong foundation in the concepts of plate tectonics. To overcome some of these issues and to provide students from all disciplines within the Geosciences a strong foundation in plate tectonic concepts, we have developed an undergraduate level course in plate tectonics that is accessible to all geosciences students, relatively early in their undergraduate program, but rigorous, quantitative, and up-to-date. The goals of the course include: (1) provide students with an understanding of the history of plate tectonics - how it developed; (2) help students understand how plate tectonics fits into the range of geoscience topics; and (3) demonstrate the continuing development of the plate tectonic concepts, so students are able to adapt their understanding as new developments arise. Key to reaching these goals is the integration of hands-on, discovery focused activities into the course. These provide the students with an improved understanding of how a framework model is crucial to understanding data and other observations.