Executive Summary

Like many states, Georgia continues to experience a shortage of qualified physics teachers (Henson, 2008). In response to this situation, the GSU MAT program in secondary science has tried to work with the Department of Astronomy & Physics to develop courses which could be taken within the broadfield certification option and would give candidates a strong foundation in physics to those lacking the requisite conceptual background. In 2011, the Department of Physics & Astronomy began the development of a two-course sequence designed to meet the needs of these students. The first of the two courses was piloted in the summer of 2011, and then revised during the academic year through a collaboration with science education faculty from the COE. The current version of the course will weave together similar content as found in the pilot course with a thorough exploration of strategies for teaching and learning physics to promote conceptual change. This study seeks to examine is the capacity of this revised course design to prepare future science teachers equipped to teach physics in a manner aligned with suggestions made in the national standards documents and conceptual change literature (AAAS, 1993; NRC, 1996; Vosniadou, 2008).