

Title: Teacher Training in Astronomy and Physics

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Abstract:

This Pre-College Teacher Training proposal will develop the content and evaluation materials for a curriculum training program for middle and high school teachers in the state of Nevada. The program will be offered at UNLV as a two-credit graduate course offered during the Summer term of 2023 and beyond. The program will focus on several astronomy and physics topics that are part of the Nevada Academic Content Standards (which, in turn, are based upon the Next Generation Science Standards). This twenty-hour course will be broken into four units addressing: 1) Energy Essentials, 2) Energy and Society, 3) The Sun, Stars, and Planets, and 4) The Universe. Each unit will involve five hours of instruction.

Following the approach outlined in the Next Generation Science Standards, the material will be centered around observed phenomena, which motivates the investigations into each topic. Examples include how the Sun shines, how society uses and produces energy, and why we see the cosmic microwave background radiation. The goal is to provide teachers with the necessary background knowledge and a variety of examples that they can incorporate into their classroom lessons. As part of this proposed program, we will develop evaluation materials to determine how effective the curriculum is in improving the teacher's understanding of the content, and in incorporating it into their classrooms.