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My voice looks like that? A hands-on and textbook free approach to learning physics

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Many physics departments offer a “Physics of Music” course that is intended for non-majors. This topic appeals to a broad cross-section of students, in part because people recognize that it represents a rare window into the abstruse world of physics from a familiar vantage point. Conversely, physics educators recognize that an interdisciplinary course such as this offers an important opportunity to convey the methods and habits of scientific thinking (let alone some principles of acoustics) to a population that has shunned math and science since high school. In this presentation, I will describe an effective approach to teaching this topic, which has evolved over the past twelve years at Central Washington University. In particular, I will emphasize three elements that distinguish this approach: the sequence of topics, a computer-intensive lab experience, and the use of the internet in lieu of a traditional textbook. The rewards and pitfalls of including small group research projects as part of the class will also be discussed. Information about PHYS103 at CWU can be found at <http://www.cwu.edu/~physics/courses/103/index.html>.