962-G1-86   **Robert W Peck*** (`rpeck@lsu.edu`), School of Music, Louisiana State University, Baton Rouge, LA 70803. *Algebraic Concepts Illustrated through Musical Analysis: Interdisciplinary Applications in Mathematics and Music Courses.*

The relationship between mathematics and music is rich, and provides teachers in one discipline opportunities to motivate students with applications from the other. In recent decades, music theorists have incorporated algebraic systems, particularly set theory, in their analysis of 20th-century atonal music. Many of these applications are now a standard part of undergraduate music theory curricula. Such learning tools offer the student techniques for revealing structure and coherence in a repertoire in which the methods of traditional musical analysis do not apply. At the same time, examples from music can be used to illustrate concepts in mathematics courses. In particular, we will examine the isomorphism of the 12 chromatic pitches onto the integers modulo 12: the residue classes of mod 12 correspond to 12 pitch-classes. Examples from music will illustrate operations with sets, mappings, permutations, and various other operations and relations. Further examples incorporate techniques from group theory, using music to demonstrate properties of finite groups, cyclic groups, subgroups, cosets, and invariant subgroups. (Received July 25, 2000)