

Meeting: 1003, Atlanta, Georgia, MAA CP S1, MAA Session on Meeting the Challenge: Relationship Between Mathematics and Biology in the 21st Century

1003-S1-1626 **Ronald E Mickens*** (rohrrs@math.gatech.edu), Clark Atlanta University, Department of Physics, Atlanta, GA 30314. *A Model Introductory Mathematical Biology Course.*

A major difficulty in any attempt to create courses jointly involving mathematics and biology undergraduates is the lack of a common set of concepts known to both groups. A related problem is the further lack of relevance of one area to the other as perceived by each group. Our presentation will outline a possible course that can help to overcome these impediments. The suggested course is mathematically centered on the use of two-dimensional phase-space and the determination of possible trajectory paths by use of elementary concepts from the qualitative theory of differential equations. All of the relevant ideas and required techniques can be taught to students having essentially only a knowledge of what a derivative is and its associated geometrical properties. No detailed background knowledge is required in differential equations.

Since non-biological "trained" students are generally not proficient in the details of biology, even at the introductory level, this course's focus is on topics that can be both appreciated and understood by individuals lacking such knowledge. (Received October 05, 2004)