
Many incarnations of the Introductory Differential Equations course aim to teach students analytical, qualitative and numerical methods for gaining insight into the behavior of ODE solutions. Using mathematical models to keep this material in context allows students to gain a greater appreciation of the mathematical techniques typically taught. We discuss several variants of an ODE modeling project (utilized at two different institutions) in which students explore the behavior of cancer growth and treatment through existing mathematical models. The exploration includes both understanding the mathematical workings of the models and their limitations. We will discuss the mathematical, affective, and writing goals, contexts and outcomes of the projects, and how they differed for the two institutions. (Received September 15, 2011)