1046-A5-173   **Samer S Habre*** (`shabre@lau.edu.lb`), Mme Curie Street, P.O. Box 13-5053, Chouran, Beirut, 1102 2801, Lebanon. *Students' understanding of slope and direction fields in a non-traditional differential equations class.*

A non-traditional introductory course in differential equations emphasizes a qualitative approach to the learning of the material. The recipe-type approach for solving quantitatively first-order differential equations is marginalized; instead such equations are solved by sketching their solutions, either by means of a slope field or through a sketch of the phase line for autonomous equations. Second-order equations are turned into systems of first-order ones; the vector field of the system is then drawn to obtain qualitatively solution curves. Such an approach, whether for single equations or for systems of equations, is based on an understanding of the derivative of a function at a given point. In this presentation, I discuss students' receptivity of this approach when enrolled in a non-traditional differential equations class. In particular, I report on the students' successes and failures when working with slope and vector fields, and I investigate if students understand the differences and similarities between these fields. (Received August 12, 2008)