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1003-97-1135 **Jim Brannan*** (jrbrn@clemson.edu), Dept. of Mathematical Sciences, Clemson University, Clemson, SC 29634. *Persepectives on Contemporary Trends in the Teaching of Differential Equations.*

Following essential introductory material in an ODE course there are three relatively distinct areas that can be emphasized or sampled: (i) nonlinear equations and chaos, (ii) modern linear engineering systems and (feedback) control, and (iii) numerical simulations. Interest in the first topic has been inspired by research of physicists and mathematicians over the last fifteen or twenty years. The second topic, motivated by engineering design and control problems, has evolved over a longer period of time and is strongly dependent on concepts and methods from linear algebra. The last area, a branch of scientific computing, is what many scientists and engineers in the workplace do for a living. Most textbooks have incorporated material related to the first topic. However, it is harder to find many textbooks that give much attention to the latter two topics. The latter topics are particularly important if the target audience consists of engineering students. Time is always a constraint in an introductory differential equations course but most textbooks can be rewritten in such a way to include introductory material on these topics in the form of (optional) chapter sections and/or projects. We present some examples of the types of problems that illustrate these ideas. (Received October 04, 2004)