

1116-S1-2193 **Christopher S. Goodrich*** (cgood@prep.creighton.edu), Creighton Preparatory School, 7400 Western Avenue, Omaha, NE 68114. *Chaos Theory and Nonlinear Systems in the Differential Equations Classroom.*

I will discuss some of the teaching techniques that I have used when introducing students to nonlinear systems and chaos theory in an introductory differential equations course. In part, I will explain how it is possible to introduce students to limit cycle theory (e.g., Poincaré-Bendixson theory and Dulac's criterion) by means of computer software while at the same time making significant connections back to the students' single and multivariable calculus coursework, including, but not limited to, Green's theorem, parameterized curves, and polar coordinates. I will also discuss some strategies for introducing students to the mathematical discipline of chaos and nonlinear dynamics by means of a variety of teaching tools, including computer software, traditional classroom instruction, and popular literature. (Received September 22, 2015)