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Chris Oehrlein* (cdoehrlein@gmail.com). *Exposure to Laplace Transforms Early in the Intro to ODE Course.*

The typical Introduction to Ordinary Differential Equations course taught to students after they have completed single-variable integral calculus (and maybe have seen some series and partial derivatives) presents standard first and second-order equations in the bulk of the term and gets to Laplace transforms and possibly series solutions or numerical methods later and sometimes in rushed fashion. Students never see discontinuous forcing functions until the end of the semester, and rarely do they make connections among different solution techniques. The presenter will show how introducing the unit step function and the Laplace transforms of polynomial and exponential functions immediately after first-order, linear differential equations provides opportunities to connect course objectives to each other and to topics the students see and use in physics and engineering courses. Early introduction to Laplace transforms also allows a chance for students to become more comfortable with the concept when it is revisited later in the course to explore second-order differential equations and applications of convolution. (Received September 20, 2016)