1061-65-189 **Mutlu Akar*** (makar@yildiz.edu.tr), Yildiz Technical University, Faculty of Arts, Sciences, Mathematics Department, Davutpasa Campus, Esenler, 34210 Istanbul, Turkey, and **Mustafa Bayram** (mbayram@fatih.edu.tr), Fatih University,Faculty of Arts and Sciences, Mathematics Department, Buyukcekmece, 34500 Istanbul, Turkey. *Laguerre Polynomials Approximation for Numerical Solution of Differential Algebraic Equations (DAEs).*

This paper is concerned with numerical solution of differential algebraic equations (DAEs) using the Laguerre polynomials approximation. Two different problems are solved using the Laguerre polynomials approximation and the solutions are compared with the exact solutions. Firstly, we calculate the power series of a given equation system and then transform it into Laguerre polynomials approximation form, which gives an arbitrary order for solving the DAE numerically. Furthermore, we extend to the Maple algorithm for numerical solution of differential algebraic equations (DAEs) with Laguerre polynomials approximation, which was developed by Wang (2005). (Received April 14, 2010)