

1116-VC-2834 **Alma Malibekova** (amalibekova1@cub.uca.edu), 201 Donaghey Ave PO BOX 4305, Conway, AR 72034, and **Diana Marcela Morales*** (dmorales1@cub.uca.edu). *Mathematical Modeling of Epidemic with Exposed Group*. Preliminary report.

Our research focuses on mathematical modeling of an epidemic within a population. It consists of a system of four non-linear ordinary differential equations that represent the groups of potential, exposed, infected and removed populations. Three steady states for the system are found and their stability is analyzed using Routh-Hurwitz criterion. The goal of the research is to find and study the endemic stability state. (Received September 22, 2015)